



Principles of *EIR* Economics What the *EIR* Economic Charts Will Show You

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The ancient model for our Alan Greenspan, Apollo's gibbering priestess Pythia, was seated on her stool by the Delphi cult's grave-site of the ancient serpent-god. She promised the mighty, but foolish Croesus, supposedly the richest man of that time, that a great empire would soon collapse. Croesus later discovered, to his surprise and great sorrow, that the empire of which that priestess had spoken, was his own.

Today, the same kind of ominous, great crunching sound, is the onrushing general breakdown-crisis of the world's present monetary-financial system. The rumbling you hear, is the death-rattle of the present economics profession. The thundering and crackling of this crashing event, will remind the literate, that the wisdom of the great Solon, the wisdom adopted by our republic's founders, not the greed of Croesus and Dick Cheney, was the model of economic and social policy chosen by the framers of the Constitution of our U.S. republic. That is the truth of U.S. politics today, despite today's dupes of that ever-Delphic charlatan of the recent two decades, the creepy-crawly critter known as Alan "Pythia" Greenspan.

This crisis we are currently experiencing, is not a reflection of a boom-bust cycle within the system. It is a collapse of the system itself. That means, that there is no possibility of a built-in rebound of the economy under the world's present, terminal phase of the floating-exchange-rate monetary-financial system. There is no continuity between the monetary-financial system, and its data, as recent experience's accounting reports might falsely suggest such a continuity. The physical economy of nations, including the U.S.A.'s, can recover; but, the post-1971-72 world monetary-financial system could not survive the presently onrushing crisis. Therefore, *EIR* and I have some important tasks to perform here and now.

That much said as introduction to the business at hand, I now present the following summary of the nature of the policy, of the situation at hand, and the manner in which that mission, of graphically animated representation of physical-economic reporting, is to be

carried out. This will be evident not only in coming editions of the *Executive Intelligence Review*, but a variety of suitable other locations.

1. EIR's Editorial Policy

Henceforth, the core of *EIR*'s reporting on the U.S. economy, will be a graphic portrayal of the way in which the physical health of that economy is *measurable as changes in comparative physical, as distinct from monetary-financial values*. This will include such treatment of physical changes, as these are to be measured county by county, for the entirety of the U.S.A., over a base-line period for comparisons, from approximately 1926 to the present. These measurements will not be made as mere comparisons; they will be measured, where appropriate, by aid of animations, as ongoing processes. The object is to get away from the inherently misleading accounting practice of comparing static cross-sections. The object is to convey a meaningful sense of economic processes as characteristically non-linear, long-wave, physical processes *per se*.

For the most part, the new reporting system's product will include many supplied materials whose usefulness will be more or less self-evident to the citizen. Some crucial elements of the whole package of reports will be much more sophisticated, but also essential for certain tasks of evaluation and shaping of policies. In both cases, however, there are certain deep physical principles involved in designing the reports. The resulting report may appear easy to understand, but the creation of the package of reports, taken as a whole, requires special qualifications of our staff. It is important to the users of the report that they have access to knowing the nature of those special qualifications involved. The role of animations, as distinct from series of charts, is one of those crucial, more sophisticated features of the way the reports are generated.

The date 1926 has been chosen as the opening benchmark of reference for the principal body of data used in *EIR*'s reporting. This has been chosen because of its significance as the approximate peak extension of our national railway system: the peak from which our United States under Presidents Coolidge and Hoover, had declined into the great economic depression of 1929–1933.¹

The data for counties will be translated into a study of changes of levels of physical factors of national productivity, as compared, as a matter of time-series, in both sub-units of 100 square miles and of hundred households. The same approach will be employed for larger

¹ 1926 represents a point significantly in advance of the onset of the 1929–1933 depression-collapse, at a mid-point between the U.S. war-mobilization of 1914–1917 and the 1933 depth of the Hoover depression. This helps us in defining the observable economic history of the post-1945 U.S. and associated economies in terms of a meaningful sense of what is up and what is down, that in the sense of a physical-economic function.

regions of the world economy. This was the approach already reflected, if only in a preliminary way, during my July 15, 2004, webcast event (see **Figures 1a–d, 3a–d, 4a–b**).

To understand a real economy, as distinct from that superficiality, and often, as today, the fraud, of reported measurements of monetary and financial systems, we must focus upon that economy's long-term cycles in formation of essential physical capital, including the categories of basic economic infrastructure and private capital.

Thus, 1926, as a point of inflection, represents an important way of eliminating the contamination of statistical studies by fallacies of composition, by choosing a statistical starting-point from 78 years ago, a point before the onrush of the 1929–1933 crisis, for our studies of the long-ranging, ongoing processes of rise and fall of capital cycles, up to the present date. It is the characteristics of the process of qualitative changes, rather than accounting reports, which must be brought into focus, to convey to the reader a sense of the process of change, which, rather than a mere succession of data-dots, is the location of the action by which the destiny of an economic process is determined.

Therefore, insofar as we must treat monetary and financial patterns, we judge those patterns from the standpoint of the continuing process of ongoing physical changes occurring in the economy, rather than measuring performance against what has become a false, systemically misleading standard of nominal improvement, as improvement is often wrongly measured in terms of monetary and financial data which are wrongly presumed to be primary determinants of relative economic health.

I warn the reader, that the resulting, significant differences which this change in mode of reporting introduces to the external appearance of *EIR*'s reports, will not represent a change from the underlying method of analysis, of policy, which I have long employed, as a professional, as in *EIR* reports, over longer than the past forty years.

Take, as a point of reference for comparisons, all of my successes, as the only publicly known long-range forecaster who has been consistently right, on the record, whenever he, prudently, chose to forecast. Those forecasts, over approximately more than forty years, have been based on that same science of physical economy which is otherwise known as the LaRouche-Riemann method: the application of the relevant principles of Bernhard Riemann's principal discoveries to the fuller understanding of my own original discoveries in the field of physical economy of fifty years ago.

The essential change in form of reporting introduced now, is, that my associates and I have stripped away the now utterly misleading mask of mere monetary-financial fluctuations, to bare the physical reality of the underlying physical transformations. This deals with the misleading impressions created by the way in which gigantic movements of purely

speculative values tend to distract attention from the relationship between household incomes and the zooming prices of meat, milk, education, health care, and cost of occupancy of a home in the principal relevant markets of the U.S.A. and Europe. The point is, to unmask the physical economic reality existing behind the distracting smokescreen of an hyperinflationary financial-market's skyrocketing speculation.

*The difference in the present, new form of reporting by **EIR**, is to be seen as the result, not of a change in my method, but, rather, of a recent, deep-going change in the present qualitative condition of the U.S. and world economies, from what were, recently, merely very sick economies, to economies which are rather immediately doomed if they continue to operate in their current form.*

Simply said, the present world monetary-financial system is now breaking apart. This disintegration of that system has reached the degree, that there is no longer a meaningful present correlation between the monetary-financial kinds of policy-shaping which are designed to meet currently accepted monetary-financial standards of performance, and the real economy on which the continued life of nations and their peoples actually depends. For example, the rise or fall of key reported indicators on sundry financial markets has no consistent correlation with the vectored shifts in direction in the real economy.

In earlier times, although physical-economic studies had been the root of **EIR**'s reporting on economy, the emphasis then was on serving a clientele which, for the most part, was still trying to understand the economy as primarily a monetary-financial system, a readership with some fractional physical insights into the influences which made the crisis-ridden monetary-financial systems behave as they have done over the preceding thirty-odd years. Now, it is no longer possible to justify an effort to cater to the prejudices of those who would not give up their wish for solutions gained through slightly reforming, rather than transforming the existing monetary-financial system. Today, there is no excuse for allowing anyone who still hopes to learn anything about the economy itself, to be duped into attempts to interpret Alan "Pythia" Greenspan's Delphic chants as in some sense rational behavior by him.

The task on which the survival of our nation now depends, is, not to save the existing system, but to design a new system, one consistent with those principles of our republic's original American System of political-economy, a system from which truly sane and literate men and women would never have departed willingly. We must base that new design on consideration of the known, non-monetary, physical-economic factors which confront us today.

The change is, therefore, that, instead of tracing the effects on physical economy caused by shifts within the bounds of present monetary-financial policies of practice, *we must now accept the inevitable doom of the world's present monetary-financial system, and focus all of our*

efforts to design a new monetary-financial system, which fits the need to fulfil the crucial physical-economic goals on which, as I have just said, the existence of decent life for nations and their peoples now depends. To accomplish this we must read the real economy in terms of the new monetary-financial system we must create, while we bury the bankrupt old monetary-financial system with finality, for all time to come.

To restate the point once again, for clarity. Instead of attempting to forecast the physical conditions of production and life from studies of already self-doomed monetary-financial processes, we must now consider as primary the physical conditions of production and life as such, and the present, disease-ridden monetary-financial system as a cancerous-like, implicitly hyperinflationary affliction borne by the real, physical economy. Just as it would be incompetent to judge the health of the population from the standpoint of accepting the continued infection with a venereal disease, we must define the significance of the spread of the world's present monetary-financial diseases from the standpoint of the health of the physical economy and, especially, its people.

In short, the laws of economy can not be competently inferred from statistical studies of monetary-financial processes, but only as I do, as I report the needed physical criteria in the course of the present report.

1.1 A Brief History of Today's Problem

The root of the presently onrushing collapse of the U.S. and world's monetary-financial must be traced chiefly as the continuing hereditary result of that 1763 Treaty of Paris which established the British East India Company as, in fact, an attempt to establish and maintain modern world-rule by a new version of the ancient, fallen Roman Empire. With the Anglo-Dutch liberal-imperialist system established as the dominant power in Europe, over the course of the 1763–1848, the dominant feature in world economy in the interval since 1848, has been the overreaching power of the international Anglo-Dutch Liberal model of political-economy, the design established, under Britain's Lord Shelburne, as the Haileybury school from which Karl Marx, for example, later derived the stated basis for his variant on that Anglo-Dutch Liberal model.

This Anglo-Dutch Liberal model, was not merely a continuation of the Venetian tradition of financier-oligarchical ultramontaniam. As the imperial political power of Venice had declined in the aftermath of the 1648 Treaty of Westphalia, the Venetian system was cloned as a maritime-based financier power modelled in the likeness of Venice's tradition: in northern Europe, in the Netherlands and Britain, and along the coastal routes of the old Hanseatic League.

The takeover of what became James I's England by such recruits to the Venetian cause of Paolo Sarpi, gave us the adopted practice of "Aristotle for Dummies" which Sarpi's empiricism embedded in the relevant Anglo-Dutch circles. The wars engaging France's Louis XIV and the Dutch India Company's takeover of England led by William of Orange, led to that orchestration of what is known as "The Seven Years' War," under which what was known then as the Anglo-Dutch "Venetian Party" gave the British East India Company the position and intent to become a successor to the ancient Roman Empire. It was this Venetian Party which devised the Eighteenth-Century system of political-economy associated with the followers of such as Adam Smith's 1776 anti-American tract, *The Wealth of Nations*, today.

Since 1763, the only durable challenge to that Anglo-Dutch Liberal dogma, came from the influence of the founder of the science of physical-economy, Gottfried Leibniz, on the constitutional design of the U.S.A. It was the American System of political-economy, associated with such names as Franklin, Hamilton, Carey, and List, which has been the only durable rival to the Liberal system since the 1789 adoption of the U.S. Federal Constitution.

Notable, is the widespread admiration and imitation of the American System, in continental Europe, the Americas, and in Asia, an admiration which spread infectiously in the aftermath of U.S. President Abraham Lincoln's defeat of the British asset known as the Confederacy. The stunning achievements exhibited by the 1876 Philadelphia Centennial exhibition, which inspired the spread of key features of the American System into such locations as Bismarck's Germany, Alexander II's Russia, and Japan, during the immediate aftermath of that Centennial Exposition, typify this.

Nonetheless, since the Lincoln Presidency, although the British national economy was spectacularly inferior to that of the U.S.A. as a model of national economy, the British Empire, with its gold-standard system, remained, until 1931, the dominant imperial power in the world at large. Thus, to a large degree, even the internal development of the U.S.A. was weakened by the global embrace of that Anglo-Dutch Liberal world monetary-financial system. Under these conditions, London's partners among the New York-centered financier circles in the following of Bentham's tool Aaron Burr and his heirs, such as Martin van Buren and August Belmont, have often made even the U.S.A. itself, an accomplice against its own vital national-economic interests. This decadence has been, once again, the characteristic feature of the long wave of moral and economic decline of the U.S.A., over the interval of forty years to date.

From the beginning of our republic, the most crucial point of systemic conflict between our intrinsically protectionist, pro-"fair trade" Constitution and the rival British Empire, was the Anglo-Dutch Liberals' lunatic cult of "free trade." The British imperial policy aimed at the

destruction of our U.S.A. was always, still today, a policy of political-economic “globalization” based on the ultramontane religious cult of “free trade.” To parody John Milton: today’s “globalization” is Britain’s doctrine of “imperialism” writ large.

It was British imperialism’s doctrine of “free trade,”² combined with post-1815 Britain’s support for the Spanish monarchy’s slave-trade into the U.S.A. itself, which looted and ruined the U.S. economy under pro-liberal Presidents during the interval from land-bank “bubblehead” Martin van Buren’s Andrew Jackson through August Belmont’s copper-headed anti-Lincoln Presidential candidate, the “Napoleonic” George McClellan. The suppression of slavery, which had contributed no *net* wealth to, but had greatly weakened the U.S. economy, was the indispensable launching-point for world power we became under the impact of President Lincoln’s and Frederick Douglass’ leaderships.³

1.2 Capital and ‘Free Trade’

To reduce this set of political issues to their expression as economic policy, we must look at the poisonous character of the doctrine of “free trade” from the vantage-point of considering the essential role of the formation and development of physical forms of capital in a nation’s economy. It has been, essentially, the revival of a radical form of British “free trade” dogma during the middle through late 1960s, which was the key economic-policy lever by which the U.S.A. was transformed from the world’s leading producer society, to become the decadent mass of hollowed-out, rotting wreckage of past glories which our “post-industrial” utopia has become today.

For example, in today’s U.S.A., “physical capital” is correctly defined by reference to the approximate quarter-century of development of infants, children, adolescents, and young

² Notably, both the German Social-Democracy and V.I. Lenin erred fundamentally, in defining Twentieth-Century “imperialism” on a Marxian argument which traced the emergence of imperialism from industrial capitalism. Rosa Luxemburg’s *The Accumulation of Capital* was the needed correction of the relevant blunder of Marx himself. Compare the facts with the studies of the U.S.’s Herbert Feis later. The original blunder was not that of the Social-Democratic Marxists, but that of Karl Marx himself.

³ See Henry C. Carey, *The Slave Trade: Domestic and Foreign* (1853, 1858) (New York City: Augustus M. Kelley Publishers, 1967). Although profits of slavery were taken by the British Empire and its U.S. slave-owner and related lackeys, the production by slaves was a net loss to the U.S. national economy, a classical case of what is known in economics as “primitive accumulation,” the looting of the land of the U.S. and of the bodies of the Africans captured by Spanish, Portuguese, Dutch, French, and British slave-trading interests. The losses to the U.S. economy from slavery itself, were compounded by the effects of the “free trade” policies imposed upon the U.S. by the London-directed interests. For these reasons, the Lincoln-led defeat of the British Empire and its Confederacy puppet, resulted in a great upsurge of the productive powers of labor in the U.S., an upsurge which was undermined seriously from 1876–1877 on, by the traditional pro-slavery, pro-British Democratic Party and the Tory New York City-based Republicans. Presidents Theodore Roosevelt, Ku Klux Klan enthusiast Woodrow Wilson, Coolidge, and Hoover typified what President Franklin Roosevelt regarded as “the economic royalists,” from whose larcenous hands he rescued the continuing constitutional existence of the U.S.A.

adults, into professionally pre-qualified members of our nation's regular labor-force: an approximately twenty-five-year capital half-cycle, a half-cycle of a single generation. We must then measure all other capital formation, and its maintenance and development, against the yardstick of a single generation as a social unit of capital formation.

The effect of driving the price of goods to the lowest price through "free trade" mechanisms, lowers current prices of goods by destroying the essential physical capital and the standard of living among the general population of the labor-force. Furthermore, it results in the looting of natural resources, and leads thus toward a large degree of relative physical breakdown of the economy. Such have been the results, over the course of the recent forty years, especially the recent thirty-odd years. These are the results of forty years, to be seen in the long-term cultural breakdown of a U.S. which was being transformed from the world's leading producer nation, to a global parasite which, like self-doomed ancient imperial Rome, has collapsed its own productive power at home, through looting the cheap labor and natural resources of the poorest sectors of the population in the world abroad. We have become a monstrously decadent form of "entertainment society," a modern caricature of the "bread and circuses" culture of ancient imperial Rome.

Typical of the way in which radically monetarist forms of "free trade" have destroyed, directly, the productive powers of labor within the United States' economy, is the cumulative cutbacks, and looting of both public and private investments in long-term physical-capital improvements since, especially, the beginning of the administration of President Richard Nixon.

Since the founding and development of the Massachusetts Bay Colony under the Seventeenth-Century leadership of the Winthrops and Mathers, the emphasis on the combined effects of public improvements, fostering of scientific development of technology, as at the Saugus iron works, and the promotion of canals, development of sources of power for manufacturing and related uses, regulation of fair trade levels, and so forth, had been the foundation of all periods of advances in a system of political freedom which was, and is still dependent upon the cornerstone of fostering and protection of the benefits of a rising standard of living and education built upon the foundation of a commitment to capital formation in science-driven progress.

From investments in machine-tools through large-scale integration of power, water-management, and mass transportation improvements, medium- to long-term capital investments in building up, cumulatively, the productive powers of labor, have been the characteristic feature of the progress of the U.S.A. and the improved well-being of its people. The neglect of such capital improvements, and even the reversal of such improvements, on

one pretext or another, have been the principal source of the economic afflictions of our people and our nation in general, especially since 1971–72.

These capital improvements often run in the order of cycles of installation, maintenance, and depletion, of one to two generations' span. Some systems have served us for a century; more often, for a half-century, or a single generation. If we cease to build the cost of creating and maintaining those combined public and private investments in physical capital into the built-in overhead charges on sale of produced goods, and into maintenance of family-income levels on a scale comparable to the frontiers of modern technology of productive and related progress, we decay, and perhaps die as a national economy.

The driving of prices to the lowest possible level, loots the world's existing economy, by both destroying existing useful physical capital, and preventing the investment in new. By driving prices to the lowest level, we transform human beings compelled to labor at those prices, to human cattle, to a life as yahoos.

These considerations of physical capital must be built into prices of goods exported and traded otherwise. Unless such "fair trade" levels are installed and maintained, we are ruined as our economy has been wrecked since the middle of the 1960s, especially since the 1971–1975 change from a successful fixed-exchange-rate, regulated monetary system, to the presently bankrupt, doomed floating-exchange-rate, globalized system.

If you voted for "free trade," you have no one to blame for your misery as much as yourself.

2. The Price of Scientific Incompetence

The new series of studies provided through the pages of *EIR*, may be viewed as a technique for making clear to those citizens who are laymen in physical-economic matters, those ideas which are indispensable for affording ordinary businessmen and other citizens a sane insight into the way a healthy modern economy functions.

There are, admittedly, certain deep principles of science involved. I shall identify, briefly, some of those deeper principles in this present report. However, what we have designed for your customary use, might be fairly described as a decision-making model, a model which meets the decision-making needs of even the layman, a model which happens to operate as it does because of deep scientific principles which, in the future, ought to be mastered by students in secondary education, and should be mandatory in any program of higher education. The distinction here is that between the requirements of the user and those of the designer, as between the design of the automobile which the typical citizen can use in a rational way, but a model derived from the science required for the successful design of that vehicle.

In this and the following sections of this report, I identify the general nature of those deeper principles. After that, present the decision-making methods and procedures which the citizen must know in order to make rational decisions in economy.

2.1 What Is Economy?

The mere possibility of the existence of any successful form of economy, depends upon those specific mental powers of the human individual not existing in any lower form of life than man.⁴ These powers are expressed by society's potential for willfully increasing the human species' *potential relative population-density*, as no lower form of life could do this.

The simplest illustration of this difference is met, in each case, as an experimental proof of what is known as a scientific hypothesis, defines a proven universal physical principle. The discovery of these universal principles, affords mankind the ability to increase the number of persons who can be sustained within an area of a given type and quality, as no species of animal can do this. This principle of the human mind enables society to sustain an increase of human output which is greater than what must be necessarily consumed by society to produce that output. So, our species is contrasted with higher apes, whose potential living population would be numbered in not more than millions, did man not exist; whereas the living human population of today is reported to be currently in excess of six billions individuals.

The idea of national economy was belatedly established as an institution of modern European cultures during the Fifteenth-Century, Italy-centered Renaissance. In this way, the modern form of sovereign nation-state republic was first established, in Louis XI's France and Henry VII's England. For the first time in our knowledge of history, a principle of government was adopted in which the primary responsibility of government was maintaining and improving the standard of general welfare of all of the population and its posterity. It was the long-sought emergence of that form of sovereign nation-state republic, which gave birth to what is competently defined as modern economy. Such a sovereign nation-state assumes responsibility for maintaining the well-being of the entire population, to such effect that the present generation is enabled, and implicitly obliged, to develop later generations which are more numerous, and more powerful productively, than themselves.

⁴ This use of "powers" signifies the notion which the pre-Aristotle Classical Greeks, such as the Pythagoreans and Plato, associated with the Greek term *dynamis*. That meaning does not exist in either the doctrine of Aristotle or the modern empiricists and positivists. Hence, the bitter quarrel between Carl F. Gauss, who, like Kepler, Leibniz, and Riemann, associates universal physical principles with such powers, and, the opponents, the empiricists Euler, Lagrange, *et al.*, over the physical-geometric significance of the complex domain. This notion of powers is associated with the Classical principle of hypothesis, a principle whose existence the reductionists, in general, ignore or flatly deny.

Thus, no known such political-economy existed prior to the Fifteenth-Century Renaissance, which is to say, prior to the birth of the modern sovereign nation-state republic. Ancient and medieval economies were based upon systems in which a relatively powerful few, held the many in subjection as either herded or hunted human cattle. The idea of a republic in which no one could be reduced to the status of human cattle, is at least as old as the conflict between Solon of Athens and the Sparta of the Lycurgus code; but, the realization of such a republic was postponed until modern European times, when, for the first time, the performance of government was conditional upon its promotion of the general welfare of all of the living and their posterity: the principle which, as stated in the Preamble of the U.S. Federal Constitution, is the highest law of our own republic today.

It was the affirmation of this principle of modern society, in the 1648 Treaty of Westphalia, which, for the first time, established a principle of international law among nations, which brought forth the form of European society which, despite powerful contrary forces within society, has dominated the shaping of the history of our planet since the middle through late Seventeenth Century. That Treaty of Westphalia is the standard by which the degree of civilization of nations and peoples is to be measured, still today.

It was in the context of those developments, that a rational notion of the physical, rather than merely monetary-financial conception of “growth” or “profit” on material production as a whole, emerged as the concept of modern national political-economy. As the Seventeenth-Century reforms of France’s statesman Jean-Baptiste Colbert and the scientist Gottfried Leibniz typify this, that Treaty of Westphalia unleashed the locked-up potential for society’s increases of its own productive powers per capita and per square kilometer.

For example. Concede that much of contemporary secondary and higher education is a farce. Yet, after making that concession, the fact remains that to maintain the supply of professionally capable persons needed to maintain present U.S. society as a whole, education of the young would have to be extended today to an age of between 18–25 years. This requires a certain level of health and cultural existence of the population growing up during that quarter-century. Today, in relatively advanced European cultures, for example, most of the population must be educated up to the level of professional competence, if those cultures are to maintain a quality of function which makes them useful to humanity more broadly.

Therefore, for the U.S.A., for example, the challenge is to maintain a population as a generation-in-education, for up to a quarter-century, before assuming full adult economic responsibilities to the society as a whole. This development must be of a certain quality. The potential physical productivity of the graduates of education must be of a quality and quantity, over forty or more years of post-graduate life, to meet the requirements assigned to that generation for maintenance of the entire population during that interval, and for

providing a rate of effective scientific-technological progress sufficient as a relative starting-point for the coming two generations. Such development of a new generation represents a unit capital cycle for what a revived U.S. productive economy must become today.

If a society, such as the U.S.A., lowers the standard of living, as by cheapening wages-income, or by cutting on education, basic economic infrastructure, health-care, or, by putting a relative freeze on technological progress, and so on, the society as a whole would send itself into a long wave of collapse. It is precisely this which the U.S., among others, has done to itself, to degrade itself from its former status as the world's greatest producer nation, to the rotted-out "post-industrial" parasite-nation we have become over the course of the recent four decades.

2.2 Physical Economy

The work of the Russian founder of the branch of physical science known as biogeochemistry, V.I. Vernadsky, helps us to make clear some of the crucial practical implications of what I have just said.⁵

Vernadsky, following the precedent of the pre-Aristotle, Classical physical-scientific method of Thales, the Pythagoreans, Plato, *et al.*, divided the scientific experience among three specific categories of universal physical principle: a.) processes whose principles are adequately determined experimentally without taking the existence of life into account; b.) processes whose governing principle is consistent with a principle of life (the Biosphere); and, c.) processes whose origin is a principle of cognition (the ancient Greek *noësis*), a principle higher than that of life, which exists only in the manifest intention of the Creator and the creative powers of the human individual (the Noösphere). Vernadsky's method divided the known universe among three classes of fossils: "fossils" of non-living processes; fossils of living processes; and, fossils of mankind's use of his creative powers to develop objects and conditions not otherwise produced by nature, as a functional part of society's environment.

Thus, biogeochemical studies show the fossils of the Biosphere as an increasing ration of the total composition of the planet Earth, whereas the relative weight of the fossils of human creative innovation and related work, is increasing at rates more rapid than the expansion of the Biosphere as such.

Here, we touch on matters of scientific principle which are absolutely decisive for a rational understanding of physical economic processes, and yet which are rarely taught, or even known to exist, in most university curricula today. This involves the most important

⁵ Cf. Lyndon H. LaRouche, Jr., *The Economics of the Noösphere* (Washington, D.C.: EIR News Service, 2001).

controversy in all which is known as science in European culture since no later than ancient Classical Greece to the present day.

The significance of this view of the Biosphere and Noösphere for the purpose of studying physical capital movements, and their function for the economy as a whole, is that the U.S. economy will now depend upon an expenditure of approximately half of the total national real (physical) capital investment in maintaining basic economic infrastructure which represents man's willful changes in the Biosphere and Noösphere: the maintenance and expansion of improvements in the Biosphere and Noösphere. It means the greening and water-management of the planet, especially our own and our immediate neighbors' portion, and also capital investments and maintenance of systems of power generation and distribution, mass transportation systems, urban development, health-care and sanitation, and education. The remaining portion, in the range of half the total, will be required for power-intense, technological progress, in expanded volume and science-intensity of investments in production of goods for consumption.

In the American System of political-economy, this means, in today's technology, that about half of the total capital investment in the economy as a whole involves government's action in the economy at various levels (e.g., international, Federal, state, and local): either as government enterprises, or activities with private participation which are sponsored and regulated by government action. This creates the "environment," in the broadest sense of that term, within which private initiative acts, and upon which, for the most part, effective private initiative depends.

In that set of relations, we must recognize that the role of private entrepreneurship as a creative force in the economy, is an exemplary expression of the intention we ought to associate with the concept of the Noösphere.

Those forms of human creativity which Euler, for example, implicitly insisted could not exist, are actual activities, which express the sovereign creative powers of the individual mind. These are typical of the proper characteristic of all phases of a national economy; but, they acquire a special meaning in the case of the private entrepreneur who, like the leader of a machine-tool-design firm, expresses the quality of strictly defined scientific creativity as the characteristic distinction of the work of that enterprise. These, for example, are typical of the closely held machine-tool and related enterprises on which large construction and manufacturing enterprises have depended, as the corporation's vendors, for their best achievements.

A better understanding of this role of the creative entrepreneur can be developed by a thorough-going reflection on the content of U.S. Treasury Secretary Alexander Hamilton's December 5, 1791, Report to the U.S. Congress *On the Subject of Manufactures*.

The same lesson can be learned in another way, by studying the discrepancy between the relative achievements of Soviet military science and that relatively miserable management of the non-military sector which I, in February 1983, pointed out to the Soviet government as the Achilles' Heel which could bring about the collapse of Soviet power "in about five years."⁶ This collapse reflects the fatal weakness in Karl Marx's and Frederick Engels' adoption of the British Haileybury model of political-economy as the foundation for Marx's own leading economic works. The issue here, is not so much between the U.S. and Soviet systems, but the specific form of common opposition of both the British system and the Soviet schools of Marxian economy to the American System of political-economy of Franklin, Hamilton, the Careys, and Friedrich List.

The Human Side of the Equation

The lesson to be learned on this account, at this point in this present report, is of great present relevance to the typical incompetence prevalent among those certified economists of Europe and the Americas today, whom I have justly described on more than one occasion as "quackademics."

The most vicious, even viciously anti-human of the features of Marxist dogma bearing on the implications of the essential role of the entrepreneur, is typified by Frederick Engels' argument on the subject of "the horny hand of labor." His argument was a real howler of pseudo-scientific babble: that technological progress in human society came not from a creative power of the individual mind, but "the opposable thumb." This piece of anti-scientific ideological folly by Engels, merely typified the kindred implications of the "class struggle" psychology of the socialist movement generally, an "anti-intellectual" mental sickness, which is also echoed as a widespread tradition within the arguably anti-communist trade-union organizations. It is that background which produces the type of warped, intellectually and morally crippled ex-socialist personality met among Vice-President Dick Cheney's outrightly fascistic collection of neo-conservative "chickenhawks" today.

The common root of that kind of mental illness in modern European cultures, a root which the indicated sickly type of professed socialist shares with mathematicians such as Euler, Lagrange, Cauchy, *et al.*, is what is termed, generically, as "reductionism." In the case of Euler *et al.*, that mental disorder is called empiricism, or, in later expressions, positivism.

⁶ See Lyndon H. LaRouche, Jr., Kempinski Hotel Press Conference, Berlin, October 12, 1988. The video-taping of that public press conference in Berlin, was broadcast in a national TV Presidential campaign broadcast later that same month. In it I forecast the imminent chain-reaction collapse of the Warsaw Pact governments of Eastern Europe, beginning probably with Poland, and leading to the agreement to re-establish Berlin as, once again, the national capital of Germany.

This sickness of the mind has a deeper root, not limited to the environs of globally extended European cultures. The root is the view of the oligarch that the mass of people must be managed by conditioning them to submit to live as either herded or hunted human cattle. The connection is typified by the infamous argument which the anti-American Adam Smith borrowed from the Physiocrat Dr. François Quesnay. In this matter, Quesnay, in positing “*laissez-faire*,” had insisted that the profit of the estate was generated by the lord’s property-title, in respect to which the workers on the estate were, in economic function, merely as cattle. Adam Smith translated Quesnay’s notion of “*laissez-faire*” as “free trade.” This same mental disorder is a principal axiomatic feature underlying the doctrines of that majority among contemporary academic economists whom I have fairly described as “quackademics.”

The absolute distinction of man from the beasts, is also the basis for the possible existence of the human species, as we have known its pre-historic existence and history. This distinction of the human mind, the power not only to generate the discovery of previously existing universal physical principles, but to increase mankind’s power in and over the universe through the powers lodged with those discovered principles, is the characteristic feature of the human individual, on which the existence of human society, and modern economy, depend absolutely.

The cultural problem has been, that, everywhere we look into pre-Fifteenth-Century history and fathomed pre-history, the condition of the generality of mankind is the life of herded or hunted human cattle. The submission of such cattle to the whims of the cattle-herder, has been that relic of bestiality against which all noble efforts for mankind have been fought. The development of the Classical form of modern sovereign nation-state, as expressed by the Florence-centered Fifteenth-Century Renaissance, represented a threat to those interests, including then the Venetian financier-oligarchy’s interest. Thus, the repression of peoples by means such as the Spanish Inquisition and the religious warfare of the 1511–1648 interval, was carried over into the forms of reductionist political philosophy, such as empiricism, in which the existence of the most essential human quality of the individual mind was the target of a virtual intellectual mass-castration performed under such titles as public and higher education.

Against that background, the true struggle for human freedom has been against those forms of repression of the creative powers which distinguish the human individual from the beasts which a Frederick Engels would portray them as being. It is when the role of the entrepreneur is situated against that historic background, that the noblest intention of the concept of entrepreneurship of farmer and artisan expressed by Hamilton’s *On the Subject of Manufactures*, leads us into moral, as much as practical insight into the special quality of genius expressed as the anti-British-Empire, American System of political-economy.

The combined, interdependent role of the coordinated progress of entrepreneurial agriculture, with the entrepreneurship of the growing urban centers, both tied together by the development of publicly sponsored basic economic infrastructure, as described by Hamilton in that report, captures the essence of the American System in mid-motion.

A New Dimension in World Economy

Globally, as the population of South, Southeast, and East Asia increases, and as the development of higher standards of productivity and existence of these populations must proceed, the next two generations on this planet will experience a growing demand for so-called raw materials. That challenge is soluble, but it will require a massive increase in development of management of mineral resources, capital-intensive improvement of the Biosphere, and escalating rations of accumulated investment in basic economic infrastructure of human productive development and related quality of life.

To conduct and maintain vast physical-capital investments of these and related types, would be impossible without a long-term return to a global fixed-exchange-rate monetary system, echoing the original, Bretton Woods, protectionist model of a global system. This requires the scrapping of globalization, and of free-trade policies, in the interest of increasing per-capita capital-intensity and knowledge-intensity permeating planetary economic life.

This can be accomplished with a relatively minimal friction under the original American System of political-economy associated with our Federal Constitution.

Under such a system, “independent central banking” vanishes from the planet’s life. Governments assume the responsibility for a monopoly on the issue of national currency, and management of its circulation. This must be done with the specific intention of protecting long-term capital investment at long-term rates of primary borrowing costs (“discount rates”) not in excess of 1–2% simple-interest-rate per annum. This requires, as a supporting feature, a policy of “fair trade,” and related regulatory systems, both within national economies, and internationally. The governing intention must be to channel initiative into those capital-intensive modes of investment in scientific-technological progress which increase the per-capita accumulation of invested capital to the effect of raising the level of investment in Biosphere and Noösphere, as measurable per square kilometer and per capita.

The proper intention of financial profit in these matters, is not financial gain as such. The proper intention is to afford the enterprise a margin for growth and development of the quantity and quality of its contribution to society. In the example of the closely held enterprise which is science-technology-development-driven, this is the explicit function of what is nominally financial profit. In other instances of useful enterprises, the same intention

is reflected in a slightly different way, as providing a service which is useful for society, but which contributes, like a good newspaper, book, or scientific-cultural periodical, to the promotion of ideas and products which compete in quality of function on behalf of the kind of service they provide to the society and its members as “consumers.”

Money itself has no intrinsic moral value. A principle of “honest money” does not exist. Money, unchecked by measures of management of its issue and circulation by government, tends, by its very nature, to contribute to the factor of entropy in national economy, and, as we have seen since the international monetary reforms of 1971–1975, the power of money may become an intrinsic evil.

Looking at this matter otherwise. Ask the question, as if putting this question to U.S. Treasury Secretary Alexander Hamilton: Why have private enterprise at all? Why not let the government decide almost everything?

The fact of the matter is, as all known history shows this to be the case, that popular opinion is usually wrong, and, unchecked, is a source of the greatest of all the evils which mankind has inflicted upon itself. Popular opinion is, by virtue of its nature, the force of mediocrity, of stagnation, even, as under the massive vote for Hitler’s position as dictator, an absolute force for evil. In all known history, the role of leadership contributed by a relatively small number of individuals, even, sometimes, a single individual, is the indispensable force for needed good for society as a whole. As in the case of the greatest scientific contributions, it is the absolutely exceptional individual who has proven indispensable. In broad terms, the opportunity for some individuals to prove, by persuasion and demonstration, that society’s prevalent opinion, even its laws, are dangerously wrong, and that a tiny minority of opinion may be key to society’s endurance and progress, defines the importance of the same indispensable quality of exceptional leadership.

Take this report, and its issue of exceptional leadership, now to its next step. Take for example, the history of Classical tragedy, from ancient Greece, as from Aeschylus, through Shakespeare and Friedrich Schiller, where the secrets of the role of the exceptional individual in history are taught.

3. The Sovereign Individual Person

These tragedies were never fiction. In each case, the author, such as Shakespeare, took as a subject an actual problem of culture, as this problem is shown in the reflections of an actual case of history, or from a legend which is accepted by some group of people as part of their history. The example of the tragedy inherent in the handed-down culture of Greece, as shown by reference to both Homer’s *Iliad* and the dark age of Greek culture which erupted

in the aftermath of the Trojan War, is such a case. The great Greek tragedies, composed by the predecessors of Plato, all address a characteristic, potentially fatal flaw in traditional Greek culture, a flaw being carried forward, as if genetically, from one generation to the next.

In each instance of this, the purpose of the tragedy was to uncover the axiomatic, usually “self-evident” assumption, embedded in the culture of the audience, which must be made conscious, and willfully removed from their psyche, if repetition of the same old tragic folly were not simply to be repeated. The warning by that exceptional quality of leader Solon of Athens, to those who had succeeded him in leadership of that city, is typical of this challenge. Plato’s criticism of the tragedies authored by his predecessors, is the most crucial turning-point in the development of what has become modern statecraft.

When we re-enact Plato’s set of dialogues as the dramas they were intended to be, we recognize that error of the earlier tragedians, and also the correction for that error. This correction was subsequently defined by the Classical playwright Friedrich Schiller as the factor of the “Sublime.” Here lies the most precise indication of the historical significance of the relatively exceptional individual leader in thought for the survival and progress of civilization.

The point being made by me here and now, is of the most crucial importance respecting such matters as the survival of U.S. Constitutional government under today’s zooming escalation of a general, global monetary-financial breakdown-crisis of the present world system. Therefore, we must spend some time here in outlining the most essential of the rudiments of the case so located.

The most important example of this from pre-Plato Greek tragedy is the surviving second part of Aeschylus’ *Prometheus* trilogy, in which the explicit subject is the way in which a Greek culture imprisoned within the moral corruption represented by the mythology of the Olympian Zeus, was doomed to treat its own population largely as merely human cattle. This is the same Olympian evil carried forward into modern times by the Roman Empire’s revival of that intellectual corpse of Aristotle, which produced the great lying hoax of Rome’s Claudius Ptolemy, and, later, the creation of “Aristotle for Dummies” as what is called empiricism, under the influence of the world’s greatest loan-shark, Venice, under the personal direction that tyrant of Venice, Paolo Sarpi, who is truly the father of that bastard known as the ever-sinister Anglo-Dutch forms of liberal imperialism still today.

Against that background, Shakespeare’s English histories, based on the study of the tragic corruption of Norman England from Henry II through the overthrow of the beastly tyrant Richard III, capture the functional essence of the actual history. Schiller’s dramas, such as *Don Carlos*, *The Maid of Orleans*, *Maria Stuart*, *Wilhelm Tell*, and so on, are a most refined expression of the deeply insightful presentation of real history, as actual history, or

legend with the force of history in the mind of a people, of the historical actuality within which the drama is situated. They are never “morality plays,” nor the “immorality plays” preferred by the pro-satanic Bertolt Brecht and his often-naked imitators from among contemporary “*Regietheater*” charlatans.

The great tragedian, such as Aeschylus, Shakespeare, and Schiller, does not present a mere chronicle. Rather, his genius is expressed in the way the drama is composed to the effect of imparting to the living audience the essential characteristic of the period of actual history which is mediated to the audience through the drama composed for the stage. The great directors and actors who are required to deliver a competent performance of these plays, reject the foolish egotism of a Sir Lawrence Olivier, who reported that the motive for the actor’s choice of career is, “Look at me!” (What an artistically ugly spectacle that sometimes produced!) The function of the division of labors among the playwright, director, and actors, is to use the stage to evoke the essential, determining, “axiomatic” feature of a real period of history within the mind of the member of the audience.

As Schiller once expressed this: the function of Classical theater is to have the audience leave the theater better people than had entered it. The means by which great drama and its performance accomplish that ennobling result, is by addressing the most common form of essential evil within the members of the audience, their moral littleness of mind and spirit.

Great Classical tragedy impels the mind of the member of the audience to find itself captured by the failed role of the putative hero, the Marquis of Posa, in Posa’s relationship to King Philip and Don Carlos, respectively. The heroine of that drama is the Queen, who is necessary for the drama, to expose the tragic force of Posa’s own folly, as Schiller uses secondary characters in his *Wallenstein* to show the good lacking in the actualized Wallenstein who fails to act against his Habsburg masters, to bring the horror of that war to an end. By putting the member of the audience in the position of wishing that the crucial figure of the tragedy were not such a failed fool, the citizen among the audience finds himself, or herself judging the behavior of the powerful figures of society, rather than merely complaining about his own immediate personal problems.

Thus, by tasting the notion of the citizen’s moral responsibility for judging and guiding the leaders of his or her society, the person of “little mind and spirit” entering the theater, leaves it sublimely uplifted morally and intellectually by an impassioned sense of his responsibility as even “just a little citizen.”

It is upon such ennobled “little citizens,” that the greatest leaders of a society for a time of crisis, such as President Franklin D. Roosevelt, depend for the support needed to carry forward those initiatives by means of which a nation, such as a U.S. doomed by the

re-election of Herbert Hoover, rises to throw off the tragedy of its time, and usher in, at least, a period touched by greatness.

This is not merely the secret of the mission, composition, and presentation of great drama; it is a reflection of the essential role of the individual in all of history. It is that principle of the individual, which is the essence of the principle of true entrepreneurship upon which the anti-British (anti-Anglo-Dutch-Liberal) American System of political-economy is premised.⁷

The best choice of pedagogical model for explaining the way in which most U.S. citizens (like those of Europe and Ibero-America) are “brainwashed” today, is by reference to both Johannes Kepler’s elaborated denunciations of the fraudulent character of Aristotle’s influence on not only the hoaxster Claudius Ptolemy, but also Copernicus and Kepler’s one-time associate Tycho Brahe.

On precisely this point, it is more essential than merely relevant, today, to recognize that only ignorant, or foolish people regurgitate the myth, that the issue of the Sixteenth Century was the division between Catholicism and Protestantism. In fact, the issue was that created by the Venetian-controlled faction within the Catholic clergy, who acted, beginning the 1480 unleashing of the beast-man of the Spanish Inquisition, Tomás de Torquemada, for the purpose of destroying that Catholic Church which had been brought back to life as an institution of ecumenical intent by the great continuing Fifteenth-Century effort associated with Cardinal Nicholas of Cusa and others.

It is exemplary, that one of the leading figures in bringing this about, included typically, not only Venice’s Cardinal Gasparo Contarini, but the posting of the virtual head of the Venetian “Home Office,” Francesco Zorzi, to London, to act, in the capacity of de facto marriage counsellor, for the brainwashing of the mentally unstable King Henry VIII. In this role, Zorzi launched the attack on Nicholas of Cusa which became the source of the continuing efforts to destroy competent scientific methods of work still today. The initial attack by Zorzi, against Cusa’s founding of the modern method of experimental physical science, in Cusa’s *De Docta Ignorantia*, was Zorzi’s attack on the “method of *docta ignorantia*.” Zorzi’s point of departure then, as in related influences on the Council of Trent’s opposition to the preceding Council of Florence, was the effort to establish the tyranny of dead Aristotle over a live Church and European culture in general.

The split between the Catholics of the Council of Trent and what became known as Protestantism generally, was sculpted by the handiwork of de facto tyrant of Venice, Paolo

⁷ Hence, the actual rival of the American System of political-economy was never Karl Marx as such, but the Anglo-Dutch Liberal system of political-economy which Engels repeatedly induced Marx to defend, as in the case of Engels’ dictating role in prompting Marx’s ignorant attacks on Friedrich List and Henry C. Carey, in both cases, in defense of the Anglo-Dutch Liberal system. Unfortunately, the socialist movement generally never recognized what should be clearly obvious as the true nature of Engels’ character.

Sarpi, the Sarpi who deployed his house-lackey Galileo Galilei for sundry pieces of dirty work, and who, aided by Galileo, brainwashed the British agents of Venetian influence Francis Bacon and Thomas Hobbes. This and related actions by Sarpi codified the division between Trent Catholic and Seventeenth-Century Protestant as the counter-position of dead Aristotle to “Aristotle for Dummies,” the latter otherwise known as empiricism, Cartesianism, and, later, positivism.⁸

The secret of that whole ugly business came out into the open with the publication of empiricist Immanuel Kant’s hoax, the series of *Critiques* which purported to unite empiricism with the body of Aristotelianism. Not so incidentally, until certain editing frauds perpetrated in the post-World War II period, Heinrich Heine’s warning of the dictatorial implications of the influence of Kant’s *Critiques* was recognized as validated by the emergence of Nazism in Germany. In later editions, the relevant portions of Heine’s writings were removed from newly printed editions.

The common, pro-dictatorial feature of the neo-Aristotelianism of Zorzi *et al.*, empiricism, and Kantianism, is reflected in Kant’s *Critiques* by the denial of any knowledge not derived, by reductionist methods, from sense-perception. This feature of Kant’s writings, which was soon superseded by the G.W.F. Hegel who had swooned in virtually lustful adoration of the tyrant Napoleon Bonaparte’s conquest of Hegel’s Germany, has been imitated by Vice-President Dick Cheney, in Iraq and elsewhere, as brutal farce. This was the same Hegel who, post-1815, had transformed his earlier adoration of the fallen French Emperor, into mystical worship of the principle of the Prussian monarchy. Thus, in his doctrines on history and the state, Hegel codified the example of the Thrasymachus-like Napoleon as what became the incarnation of Adolf Hitler as dictator under the Hegel-Savigny tradition. This is as reflected by legal tradition of the Crown Jurist of the Nazi system, the follower of the ancient Thrasymachus, Carl Schmitt, the original sponsor of the Anglo-American career of Chicago University’s Professor Leo Strauss.

Thus, it is the individual who breaks the putatively “self-evident” rules, such as those of pro-Aristotelian, pro-empiricist, schoolbook Euclidean geometry, who typifies the most human of individual persons living today: the bold champions of humanity against the corruption shown by the followers of Leo Strauss. It is this anti-empiricist (e.g.,

⁸ Friedrich Nietzsche’s “God is dead” (it has been reported by some, that God said: “Nietzsche is dead”) is to be traced implicitly to what Philo of Alexandria traced to Aristotle’s nominalist definition of “perfection.” The pathological use of the term “perfection,” as this notion implicitly permeates all of Aristotle’s teachings and influence, is as “completed.” Whereas, for the Christian, for example, “perfection” in the Creator signifies a perfectly endless power of creation. The wise rabbi’s way of putting the point is, “The Messiah will come when God decides; you will not find that date published in any authentic contract.” In physical science, man’s use of discovered universal physical principles empowers man to change the universe by acting willfully, as man, through the power of those discovered principles. This does not lessen, but increases the awesome respect for God, as by Johannes Kepler, in that God is using us to assist in His continuing work of creating the universe.

anti-formalist) quality in the person which is typified by the best examples of the true original scientific discoverer, the greatest Classical poets, the most admirable entrepreneur of closely-held enterprises, and the truly qualified political leaders of a nation under today's conditions of threatened terminal world crisis.

This brings us to the particular subject-matter which I have frequently addressed under the rubric of "the goldfish-bowl syndrome."

3.1 The Escape from the Goldfish Bowl

The typical American, or European, today, lives in a kind of prison of the mind which I have called "a fishbowl." Like a goldfish swimming in a fishbowl, or larger aquarium, the typical American explains the world around him to himself, in terms of certain arbitrary, but popular assumptions which should remind us of the *a priori* definitions, axioms, and postulates of a secondary school course in Euclidean geometry. The widespread belief that "free trade is necessary," or the delusion that "NAFTA will help our economy," or the babbling Alan Greenspan's ritual worship at the pagan altar of globalization, are only some notable examples of the kind of brainwashing which controls most individual and collective behavior at the highest and lowest levels of rank in our own and European nations today.

But for the power which those delusions exert, axiomatically, on the decision-making of our own nation (for example), at nearly all levels, today, we would never have tolerated what President Nixon did to begin the wrecking of the U.S. economy in 1971–72, and would have rejected all nominees for election to high Federal office who supported those policies by which we have transformed our nation, formerly the greatest productive power on this planet, into a post-industrial mass of wreckage and mass-misery of an imperial form of "bread and circuses" culture today.

If we are to escape from the doom now descending upon us, we must change our ways. We must use the very shock of the fact that our economy is disintegrating physically before our eyes, to force ourselves to recognize that the first thing we must change is our own popularized habits of opinion-making. The beliefs which have caused us, as a people, to destroy us through transformations in that downward direction which have become habitual over four recent decades, must be identified, so that they must be removed, by the people themselves, from inside themselves.

The ideas by which we, as a people and nation, have been induced to destroy ourselves, have a character like the definitions, axioms, and postulates of a formal Euclidean geometry, beliefs which have no actual proof, but which we take on faith, beliefs which become the shackles we place again upon our own mind as we awaken each day.

This is “the fishbowl syndrome.” This, we must understand. This, you must also understand, even if trying seems to make your head hurt.

Therefore now, we must impose upon readers, even those with a relatively sparser scientific education, to ask them to follow the argument at this point. We must interpolate here, some clarification of the principles of science which are indispensable for independent understanding of what we shall present in relatively plain words, in the concluding section of this report. I have worked this out for as much simplicity as would not misrepresent the case; but, although I have worked this down to as much simplicity as that allows, this will, admittedly, include some passing moments in this section where patience and concentration by the reader will be required, as preparation for the relatively straightforward description in the section to follow.

Paolo Sarpi’s empiricist followers, such as René Descartes, followed in the way of folly mapped by reductionists such as Aristotle. The followers of Descartes, including the Paris-based Venetian Abbot Antonio Conti and his English accomplices, created a synthetic Isaac Newton which they superimposed upon the image of the black-magic specialist of the same name.⁹ They defined the universe by means of the arbitrary adoption of a set of allegedly “self-evident” definitions, axioms, and postulates. The adoption of that set of ivory-tower assumptions was adopted as the framework within which all observable events must be mapped by “the faithful,” mapped in an arithmetic way. The adoption of such a set of axiomatic assumptions, is the elementary example of the class of mental disorders which I have named a “fishbowl syndrome.” Belief in “free trade” is a common symptom of such a mental disorder, a “fishbowl syndrome.”

Notably, the middle through late Eighteenth-Century devotees of the Newton cult, such as d’Alembert, Euler, and Lagrange, and their Nineteenth-Century followers, such as Laplace, Cauchy, *et al.*, adopted what they defended fraudulently as a purely mathematical basis, free of the contamination of geometry. Their fraud was to evade the truth that what they had actually done was to adopt a Euclidean-Cartesian geometry as self-evident, and that the

⁹ The literary, mythological Newton, as distinct from the actual biological entity of the same name, was the common product of a concert of influences, including the notorious theologian and hoaxster Samuel Clarke, which latter was acting largely under the influence of the Paris-based Venetian abbot and avowed Descartes devotee Antonio Conti. Conti, until his death in 1749, was the central organizing figure of a network of salons throughout Europe, including the notorious Voltaire, d’Alembert, and members of the later inner circle of the Lord Shelburne who created the British Foreign Office organization, the Martinist freemasonry of Count Joseph de Maistre, *et al.*, behind the French Revolution, the same Martinists who later produced that financier-oligarchical circle, the Synarchist International, which created the fascist regimes taking over western and central continental Europe during the 1922–1945 interval. As to the biological Newton himself, the London opening of what had been supposed to be his wondrous chest of secret papers revealed what the responsible investigator in the case, John Maynard Keynes, denounced as a collection of black-magic and kindred rubbish.

adoption of this choice of element of a “fishbowl syndrome,” eliminated any further need, as J. Clerk Maxwell asserted this, “to consider any geometries but our own.” For example, in his several childish vitriolic attacks on Leibniz, Leonard Euler, one of the world’s leading mathematical formalists, then ensconced at Berlin, acted on behalf of the wide European network of Newton-cult salons which had been organized by the Paris-based Abbot Antonio Conti. Leonhard Euler employed a geometry which is purely an ideological construct based on the Cartesian model.

When Carl Gauss had exposed the expression of this type of fraud by a circle orbited around Euler and his protégé Lagrange, Lagrange defended himself publicly by emitting the line repeated by every leading ideologically like-minded professional babblers afterwards, alleging that Gauss had cheated, by bringing the issues of geometry into play in addressing the matter of The Fundamental Theorem of Algebra. Since then, the praise for d’Alembert, Euler, Lagrange, and their devotees as those who had freed science from the alleged “obscurantism” of Abraham Kästner and Gauss’s 1799 paper, has been the party line in defense of the tradition of such as Laplace, Cauchy, Grassmann, Helmholtz, *et al.*, to the present day.

This outgrowth of the empiricist ideology of Hobbes, Locke, Hume, Mandeville, Quesnay, Adam Smith, Euler, *et al.*, has been the leading expression of the pathetic “fishbowl syndrome” in European culture since that time, to the present day.

The principal consequence of the spread of this empiricist cult in the abused name of science, coincides to a large degree with the reductionism already adopted by such aberrant ancient minds as the Eleatics, Sophists, and Aristotelians. Their system compelled these types, then as now, to deny the existence of any *knowable* powers in a rationally defined universe which did not fit more or less neatly into a mechanistic, Euclidean-Cartesian-like manifold.

This did not prevent those mystics from filling the mental gaps they created with purely arbitrary, supernatural powers, such as those of wild-eyed belief in magical mumbo-jumbo. So, Bernard Mandeville, François Quesnay, and Adam Smith defined economy as regulated by crooked croupiers determining man’s fate by casting loaded dice for men’s souls, doing this, implicitly, from under the floorboards of what they defined as that real universe which they confined to the precincts of sense-perception. So, Mandeville defined public good as the fruit of private evil; so, Quesnay defined the magical fruit of *laissez-faire*; so, Adam Smith’s notion of the magic of “free trade” plagiarized Quesnay. A cache of the “fishbowl syndrome” pathology.

However, it would be a mistake to assume that the incompetence shown by such empiricist ideologues was merely a matter of geometry as the Euclidean geometry classroom would define it. The name for the subject at issue is *physical geometry*, as the ancient Pythagoreans and Plato understood this point.

For example, my initial and enduring personal hostility to Euclidean geometry erupted from within me on the first day of my high-school class in Plane Geometry. For me, the task of geometry was to uncover the principles which accounted for the increase of the functional strength contributed by an iron or steel beam, by eliminating certain weighty parts of a simply solid beam. It was apparent to me, from such experiences as frequent spectator visits to construction at Boston's Charles Town U.S. Navy Yard, there had to be principled way in which the beam must be crafted geometrically, to optimize its function of support. The idea of a geometry apart from the geometry of physical processes as such, was for me a disgusting, foolish enterprise. Against this, I revolted in that instant, and could never accept a standard doctrine for geometry after that.

I was not only right, but this experience played a crucial, persisting part in leading me to the discoveries I first rounded-out during the 1948–1953 interval. Often, thus, the crucial issues of science are lying there to be recognized, right under our nose, and often in the disguise of what are mistakenly taken to be self-evident propositions of sensory experience.

To go to the heart of the principal error of the Cartesians and their like: they presume that the universe in which we act, and are acted upon, is the naive experience of its perceptible effects, effects accepted childishly, as in simple correspondence with the view of them adopted as a relatively naive view of sense-perception. As I have already emphasized, this point is best illustrated for modern European cultures by the fallacy of d'Alembert, Euler, and Lagrange exposed by Carl Gauss' 1799 paper on the subject of *The Fundamental Theorem of Algebra*.

When we depart that fantasy-realm of purely arithmetic constructions, for the practical reality of experimental physical science, we encounter what Gauss, Riemann, *et al.*, define as the complex domain of physical-geometric action. In a mathematical physics so defined, sense-perception is known to be the mere shadow of reality, shadows created by the sense-organs' superimposed interpretation of the experience which they "know" as sensations. The sense-organs do not show us the reality to which they are reacting, but they do, instead, show us their reaction, or, perhaps, lack of reaction to the actual occurrences within that real universe outside their senses.

This fact, that sense-perception is the shadow of some features of reality beyond what the mere senses tell our minds, compels us to focus attention upon the essential, axiomatic quality of difference between man and all inferior forms of life. This view, by accepting the fact of the limited authority of sense-perception, rejects *sense-certainty* in favor of trust in experimental methods of discovery. This is sometimes called "Platonic realism," although some of those who used that term, such as the empiricists and doctrinaire materialists, were clearly not quite in the real world themselves.

Two crucial points of mathematical physics from the standpoint typified by Cusa, Leonardo, Kepler, Leibniz, Gauss, and Riemann are both essential and sufficient points of reference for the purpose of this report. First, which we shall consider immediately, the physical meaning of the so-called “complex domain.” Second, after that summary, the function of Riemannian physical geometry is to be seen as both an escape from the fishbowl of belief in presumed sense-certainty, and as the foundations for an understanding of the kind of universe in which a real economy is situated.

The essence of competent physical science, including economy, is that the human mind operates effectively through those methods of scientific discovery traced from the impact of Egypt’s culture upon the development of Classical, pre-Aristotle Greek science. The prompting for this development came from Egypt, and its practice of astronomy since long before the astronomical-instrument-like features in the design of the Great Pyramids of Giza, nearly five thousand years ago. From this basis of science in astronomy, came the notion of *spherics*, a notion which is the central feature of method in all competent mathematics developed in pre-Aristotle Classical Greece.

Instead of imagining that physical space-time is located within an intrinsically linear, Cartesian-like system, we must view the universe as the ancient astronomer does: as if the night-time sky were a vast spherical space; all calculations are made by taking the sphere, rather than the line, as the measuring instrument for exploring the evidence of the astronomical space within which our planet, and its observers are looking outward to the universe as a whole. This was the method of the Pythagoreans, from which the crucial physical-mathematical and related features of the work of Plato were chiefly premised.

As Kepler’s elaborated discovery of gravitation, as in his 1609 *The New Astronomy*,¹⁰ details the process of discovery, there are anomalies of motion which suffice to demonstrate that the universe we are observing is not really the universe as it functions, but only a distorted shadow of that universe. Hence, Kepler defined universal gravitation in terms not mastered

¹⁰ It is a sign of the morally corrupting influence of the empiricists, that the founding works of modern mathematical physics, the writings of Johannes Kepler, were not translated into English publications until some time after I had made a whopping protest against this hoax by omission, during the middle of the 1970s. Then, our best sources were translations into the German, on which the educational program among my associates depended until the appearance of some useful English translation nearly a generation later. See, *Johannes Kepler: New Astronomy* William A. Donahue, trans. (Cambridge, U.K.: Cambridge University Press, 1992). Without living through the experience of discovery as elaborated in painstaking detail by Kepler, there can be no competent understanding of modern European science. The role of Kepler in making the first discovery of universal gravitation, a feat which neither Galileo nor the Newtonians could replicate, and the related prescription by Kepler to future mathematicians, to solve the challenge of creating a true universal infinitesimal calculus, and related implications of elliptical functions, are the needed experience in reliving the principles of hypothesis and experimental validation, without which induced blind faith replaces reason in the foundations of the student’s effort to acquire a “fishbowl”-free conception of scientific work.

by those, from Galileo on, through the Newtonians, who attempted to plagiarize Kepler's discovery.

This discovery of Kepler's illustrates the following points of fundamental importance for a competent science of physical economy: for the kinds of study of economy which are the only competent approach to understanding the world's present economy in an efficiently practical way under the conditions of the presently onrushing general breakdown-crisis of the present monetary-financial system. How shall we define the functioning of an economy under conditions, like the present ones, during which a monetary process no longer has any meaningful correlation with physical-economic realities?

The experimentally validated discovery of any universal principle, proceeds as Kepler's discoveries were premised explicitly on a Platonic method presented directly to him by the successive work, in defining modern experimental physical science, by Nicholas of Cusa, Luca Pacioli, and Leonardo da Vinci. Hence, a general notion of modern physics is essentially the notion of a Kepler-Riemann universe, whose development as a subject of science, has depended, pivotally, on the intervening contributions of Leibniz and Gauss. The crucial distinction between such a physical science and Aristotelianism or empiricism, is the function of the notion of those hypotheses which experimental verification demonstrates to be universal physical principles. This brings this report to a crucial point respecting the methods of representation associated with the indicated pedagogical use of animations, rather than linear accounting methods. This proves a strong conception of the notion of the functions of a complex domain.

The complex domain is a mathematical representation of the relationship of an unseen object, an experimentally demonstrable universal physical principle, to the domain of sense-perception. What is described by the function, is in correspondence with the effect of the action of the domain of unseen universal physical principles, to produce the effects recognized by means of sense-perception.

What this does, is to free the mind from attempting to adduce the ordering of events in the universe from such foolish and arbitrary assumptions as "action at a (linear) distance." The result is not a linearized non-Euclidean geometry, as the celebrated Hermann Minkowski blundered axiomatically on this account in his famous lecture on relativity, but an anti-Euclidean geometry. The latter is a physical geometry, in which functional relations are not merely linear or non-linear, but *anti-linear* in the sense of a universal principle of spherics as the primary form of metrical conceptions, free of the ideological fishbowl of Euclidean *a-priorism*.

As Einstein came to know, the universe of relativity is a Kepler-Riemann universe, a fact which was made clear to me, not from physics as ordinarily situated in the classroom, but as

my discoveries in physical economy led me to recognize the implications of my discoveries as pointing to a Riemannian physical geometry as the medium of action within economies taken as wholes. It is in the effect of applying discovered universal principles, such as those of so-called physical science, to the processes of production, that the relationship of scientific ways of discovery to mankind's practical existence, is put into a needed perspective, not only for economics, but for physical science in general. To think of science, without defining science as technological progress toward increasing the potential relative population-density of mankind, the teaching of physical science itself is a grand fallacy of composition, a disregard for the process in which the practice of science controls our way of looking at the role of society in physical science itself. Until we have humanized the practice of physical science, as only economic progress in the conditions of life of society as a whole can show us this connection, we lack any effective moral sense of the social function and nature of physical science itself.

The complex domain so conceptualized, especially when situated within the domain of a science of physical economy, is the means for escape from the magical delusions, such as those of Locke, Newton, Mandeville, Quesnay, and Adam Smith, and British political-economy generally, delusions arising as the desperate fruit of fanatically blind faith in sense-certainty.

The reductionist (e.g., empiricist) seeks to get around the physical-mathematical evidence for the complex domain, by reducing the description of the work of experimental physical science to a system of what are, ultimately, linear axiomatic assumptions. These are assumptions more or less in the form of mathematical convergence on the considered effect, as Leonhard Euler did, for example, or Augustin Cauchy later. This now brings us to a crucial point in the report as a whole.

Thus, the mathematical physics so construed by the reductionist, is not an identification of the physical principle involved, but a mathematical description of the specific form of trail left by the principle whose motion is measured in its footsteps.

The Psychology of Physical Science

The point here, which is indispensable for a competent contemporary practice of a science of physical economy, is that an experimentally validatable universal physical principle, is an integral type of object in the same sense that we recognize objects of sense-perception. This point is most clearly emphasized in what is taken as a rather obscure part to the body of Riemann's now-published work, "*Zur Psychologie und Metaphysik*," in which he underlines the connection which I have just stated here. He uses the German term "*Geistesmasse*," which may be translated with fair approximation as "thought-object." In fact, any serious reflection on Riemann's principal published works, presents a reflection of precisely that notion of

“thought-object.” This notion of “thought-object” as defining the nature of the subject-matter, is peculiar to two special areas of human thought, to the development of experimental physical science and principled forms of Classical artistic composition.

The term “psychology,” as used by Riemann in that referenced location has the following, deliciously ironical implication.

One of the most important observations in ordinary matters of human life, is the ability of the mind of the infant, to organize his or her sense-experience into a domain of definite thought-objects. In the case of Classical physical science, as in successful forms of Classical artistic composition, the same notion of “object” appears as the central feature of that experience.

Take the case of a Classical musical composition by an able composer who follows strictly the principles of well-tempered counterpoint of J.S. Bach. This includes, emphatically Wolfgang Mozart, especially from 1782 on; Haydn, similarly; Schubert; Beethoven most consummately, a feature of his work most emphatically expressed in his famous late string quartets, which are consummately Bach and something else beyond; Mendelssohn; Schumann; and, Brahms, especially the later Brahms’ work, through his remarkable last four religious songs. The qualified performer, like the composer, does not perform a string of musical notes. Rather, he, or she begins with a specific thought-object, the name and image of that composition as a whole, as a single, indivisible object of thought. Thinking of that object, the performer is governed by his or her knowledge of that indivisible identity of the composition, in the unfolding of the performance, not as a mere memorization of a series of notes.

This notion of the composition as a thought-object is inseparable from a notion of the process of development which is the permeating intention of the composition, and the intention, perhaps slightly different than that of the composer, which the performer has adduced as his or her development of the idea of that composition. In other words, development and intention, are the basis for the idea of the composition. The identity of the composition is not a label attached to it; but, is the composer’s and performer’s attempt to reduce the array of detail in the unfolding of the work to a single notion of an integral developmental process. I have found Beethoven’s Opus 131, 132, and 133 (Grosse Fugue), as the most compelling illustrations of this point.

The same is true of Classical poetry and drama, Classical tragedy most emphatically, most consummately. In the case of physical science, Kepler’s *The New Astronomy*, when considered against the background of Nicholas of Cusa and Leonardo, is not only one of the greatest of all works of modern physical science, but the manner in which Kepler crafts the report of his experience of the process of discovery, is of extraordinary importance for all

education in physical science, for reason of the fine detail of the development of his discovery, which leaves the most indelible effect of that experience upon the student. For Kepler, the Solar System itself is an integral object of thought expressed as an ongoing process of development. The principle expressed by that process is his idea of the Solar System, in contrast to all reductionist excursions into the same physical realm.

Kepler is a prize example, thus, of Cusa's notion of "learned ignorance," of knowing nothing which one has not experienced as a process of discovery through development. On this account, taking into consideration Cusa's own later development in matters of physical science, he stands today as the virtual founder of modern European science, for just that reason: of making comprehensible to the modern world the meaning of a discovered universal physical principle as a distinct thought-object. The imprint of the work of Cusa is inescapable in following the trail of development through the work of Riemann and beyond.

With Riemann's opening statements in his celebrated 1854 habilitation dissertation, all *a priori* definitions, axioms, and postulates of mathematical physical science have been effectively banned from competent forms of continued scientific practice. However, for some figures, it is more important to be famous, and possibly rich, than right.

In place of definitions, axioms, and postulates, Riemann allows no principle except what have been proven experimentally to be a universal "dimension" of physical space-time. This not a non-Euclidean geometry; it is an anti-Euclidean geometry, a modern return to the method of Classical Greek science, the physical geometry of spherics, which antedates the specific set of reductionist perversions introduced by Aristotle. This Riemannian view of the matter, is indispensable for a competent science.

In economic practice, it is the discovery, or rediscovery of such thought-objects, which is the governing impulse underlying economic progress as measured in potential relative population-density. It is not the mathematical formula which is the principle; it is the thought-object as such, for which the mathematics is merely the intrinsically imperfect, identifying smoke-trail of the principle. There was, seemingly, never a learned academic or kindred idiot, who did not exhibit his mental disability, by strewing the heavens with calculations, in his, or her effort to obfuscate an issue of fundamental principle which he or she actually simply did not understand.

The complex domain is a way of presenting footprints of real ideas, those which express, or are derived from the effect of thought-objects.

The crucial importance of this conception of thought-objects for developing competent long-range economics forecasts, imparting competent knowledge of economic processes to

professionals and general citizenry alike, and for making economic policies of practice, will be indicated in the concluding section of this report.

3.2 The Principle of Tragedy

Now, think of “Fishbowl” as another name for tragedy. With that thought in mind, turn your attention back to a place several thousand years ago, to the beginning of today’s globally extended European culture, in ancient Greece. Think of tragedy as seen by the ancient Athens of the time from Solon through Plato. Let your mind zoom in upon the place where there is an ongoing performance of the still-known first section of Aeschylus’ *Prometheus* trilogy.

As Aeschylus is directing the performance of that drama, then and there, see the faces of the members of the audience at that performance. See them wrestling with their souls, some smiling from a sense a relief, some frowning, some hating Aeschylus for what that drama is exposing in themselves. The truth about that performance, there and then, is, that the essential tragedy of all European culture since that time, has been submission by society to belief in the god-like authority of a pagan cult such as that of the Olympian Zeus’ Olympus.

In a later time, this time a crowded assembly near the banks of colonial North America’s Connecticut River, the same hatred of truth seen in some of the faces of the ancient Greek audience, is to be recognized, as if in a simultaneity of eternity, as the belief of such evil shouting preachers as the American English colonies’ evil Jonathan Edwards, a belief explicitly contrary to *Genesis* 1 and the mission of Jesus Christ. See it being expressed beside that river, in the hate-filled face of Edwards as an assertion to the effect that man is but as a miserable worm in the eyes of God.

Accusing the Creator of both hypocrisy and bad taste as Aaron Burr’s Edwards did, is not the sort of gossip against God which a prudent man would think to be a passport to a soul’s pleasant sojourn in eternity.

As a matter of fact, the “worm,” the veritable Satan of the tragedy, is the Olympian Zeus of the *Prometheus* trilogy. This is not mere opinion; the scientific evidence is objectively conclusive. Jonathan Edwards was clearly not really a Christian, but a pagan worshipper of that Zeus, or perhaps something worse, a thing like Fyodor Dostoevsky’s character, the consummately evil Grand Inquisitor.

On all those and other occasions from memory, or today, truth is never a belief passed along to us by word of mouth. Truth is the hardest of all facts of experimental science. The true quality of man is expressed by his creativity; man is, indeed, in the image of the Creator. This was the issue of, and the remedy for the tragedy of ancient Athens’ culture. It is the same issue which pitted Socrates and Plato against the Sophists, and the Pythagoreans of Plato’s

Parmenides dialogue against the forerunners of the Sophists, the Eleatics. Truth is already expressed as the mere fact of the increase of the living human population, from the mere millions possible for a species of higher ape, to more than six billions reported today. Anything contrary to that conclusion, is false, is a lie of the kind which the greatest of mankind's tragedies expresses, such as the tragedy enacted by the fools of the *Iliad* and their descendants.

This is not merely a fact which we might observe. For any fully civilized individual, it is a truth rooted in the certainties of his or her sovereign personal experience.

The believers' cult of the Olympian Zeus is, in real-life image, the reign of a very much earthly oligarchy reigning over what appears to be the domain of sense-certainty, such as the extended Venetian financier oligarchy which says to its herded underlings, "Don't think too much; do as you are told." Since submission to such rulership is an unnatural form of willing behavior among human beings, the victim can accept willing submission to his or her dehumanized social status only by inventing and adopting what are in fact fantastic parodies of reality, that in the way in which the childish mind reaches out to fairy-tales, such as the belief in supernatural deities. The all-too-typical, willing submission to the reign of un-reason, thus assumes the form of a mythology, a kind of "doll house," which also functions as a "fishbowl syndrome," otherwise known as a script for a tragedy.

The tendency is, for most of the victims of such delusions, most of the time, to hide the fact of the arbitrariness of such elements of belief by adopting the imperatives, the axiomatic-like assumptions underlying, and also hiding his or her own belief and behavior from his own consciousness, except when the authority of those assumptions as such is challenged in some way which can not be evaded by his or her intention. Thus, most people are, in their own minds, like puppets hanging on the puppet-strings of authority wielded by fantastic, imaginary beings of that sort. Those authorities reigning in that fantasy-life, appear, like the Satan of Christopher Marlowe's *Doctor Faustus*, or as the Grand Inquisitor of Dostoevsky, or, the Olympian Zeus, in a personified guise, such as the priestly garments of a Judas Iscariot.

The terror associated with the reign of those fantastic tyrants within the individual mind, is Hamlet's terror: not the fearing of dying, but of what might lie on the other side of death. This terror can be overcome only by finding something in mortal life which is a more important aspect of himself than his continued mortality. There must be a mission in living which is not nullified by the mere occurrence of death, an immortal purpose expressed within some efficient, immortal outcome of a mortal existence, as in the image of a Jesus Christ dying in torment for mankind, or, in like fashion, a Jeanne d'Arc, or a Rev. Martin Luther King.

Thus, manifest courage in ordinary mortal folk has been often associated with the survival of their children, grandchildren, and community, as the purpose for which they are living. The greatest fear, for them, is the extinction of that posterity. But, that is not the true, more durable source of the moral strength which they, as human individuals, require.

The true source of the required courage lies in that which empiricism, for example, denies: the experience of the act of discovery of those universal principles which are the tested fruit of true Socratic hypotheses. The transmission of the act of experiencing those discoveries of universal principle, both in receiving such gifts, and transmitting them to the future society, is the only true affirmation of a kind of accessible immortality which sets the human being potentially above the beasts. When we act on behalf of an efficient thought-object, of the type of a universal physical principle, the efficient universality of that principle carries with it our personal immortality, as, for the Christian, the achievements and consolations of Christ's sacrifice (at the hands of the son-in-law of Capri's evil Emperor Tiberius of the evil Roman Empire) for all mankind.

Science and Classical artistic composition, as I have outlined the case once again, here, are the activities by means of which individuals and societies free themselves from the shackles of pro-Zeusian or kindred, "fishbowl" varieties of ideologies.

The beastly tyrants of Zeus's Olympus take away that access to immortality. Prometheus must not transmit knowledge of universal physical principles to the herded human cattle. "If you wish immortality, you miserable herded human cattle, you must win that as an award by our capricious hand!"

Such are the "mechanisms" by aid of which the tyrant herds the herded human cattle. Ideologies, such as what may be recognized as the Baby-Boomer ideology today, have that kind of functional character of control over the behavior of the individual and collective Baby Boomer generally.

Great leaders of society, especially those employing Platonic methods, take their people out of much of the current fishbowl-ideology of that time. The pattern of the struggle of mankind, from ancient times to the present, has been one dominated by the cruel fact that most of humanity, even today, lives in the practical state of being either herded or hunted human cattle, as the Satan-like figure of the Olympian Zeus's appearance on Aeschylus's stage typifies this. Falsehood is every denial of man's natural right, and obligation to elevate the human physical and intellectual condition through Classical modes of scientific, technological, and social cultural progress.

The flip side of that issue, is that when we treat our fellow-creatures as if they were hunted or herded cattle, we do something evil, and they, because of our influence upon them, may do

evil to us, as also to themselves, as we see in the case of beast-man rule of Germany under Adolf Hitler, or the self-destruction of once-great Iberian culture, a destruction done by the pro-Satanic doctrines of practice of Hitler's notable predecessor, the Grand Inquisitor Tomás de Torquemada.

It was not the only the mythical gods and heroes who plunged the Greece of the *Iliad* into a subsequent dark age; it was the fools that those Greeks were, which created the image of such false gods as the gods of Olympus.¹¹ Other ancient, and more recent cultures have done the same. The notable achievement of the Classical culture of Solon's, Socrates' and Plato's Athens, is that it asserted man's freedom from such false gods. It was in the name of those false gods, that the Sophist party of Athens perpetrated the judicial murder of Socrates. The Apostle Paul, speaking to the Greeks on the subject of that Unknown God otherwise known as *the Composer* of Plato's *Timaeus* dialogue, exemplifies this struggle by the followers of Christ, to free mankind from the reign of the false gods of Olympus and the like.¹² All that European civilization has achieved, has been the benefit of recurring insurgence of that legacy of that current of thought running through the Classical Greek legacy of Solon, Socrates, and Plato.

¹¹ It was not only the account of the Roman-era chronicler Diodorus Siculus, who argued for a real-life transoceanic origin of the mythical gods of Olympus. The account by Diodorus, who was greatly influenced by Egyptian sources, commands great verisimilitude when we take into account what we know, from physical evidence known today, of the 17,000–2,000 B.C. transition from the preceding great period of glaciation into the historical era. As the case of Schliemann attests, sifting of transmitted tradition is not the best source of understanding of the history on which conventional present-day interpretations rely. A truly scientific quality of evidence is the combined product of reliving the physical experience which may be in sharp contrast to traditional accounts, and the discovery of a certain kind of crucial physical evidence uncovered now, which serves as a crucial experimental test of the hypotheses engendered by physical criticism of the systemic features of chronicles and the like. The character of the mythical gods of Olympus, as portrayed by the relevant ancient Greek sources, is in systemic agreement with the character of those Olympians and their history as variously stated or implicit in the principal crucial features of Diodorus' account.

¹² It was on this account, that, near the close of the 1970s, I commissioned my relevant associates of that time to undertake a fresh English translation of the *Timaeus*, to combat the trash of English translations produced by Benjamin Jowett and like, or even worse creatures. The true meaning of Plato's dialogues is obtained by taking all of them as a set, in treating each and all, excepting the exposition on the laws, as explicitly Classical drama in which the principle of tragedy is superseded by what Schiller defines as the Sublime. These are to be experienced as drama, acting them as a play, as Plato's superseding of Classical Greek tragedy, the superseding of the tragic principle. They must also be re-experienced as scientific works. The authority for adducing their meaning is not the customary, Sophist's pedantry of the typical contemporary specialist; one must relive them as scientific experiments, to such effect that the interpretation chosen must be that which is congruent with the scientifically validated conclusion implicitly posed by the document itself, avoiding all grammarian's funerals. Typical is the case of *dynamis*, the notion of *power*, which exists as the central principle of the Pythagoreans, Plato, and like figures, but which does not exist for Aristotle, and which virtually all of the putatively scholarly treatments treat in a savagely illiterate, and intentionally fraudulent manner. Forget what course you may have passed; what do you, on your own authority, actually know?

Thus, that quality accessible to us which Friedrich Schiller presented as the *Sublime*, is the proper first principle of knowledge.

Take as an example of what I have just written in these immediately preceding paragraphs, today's contrasted popular and truthful conceptions of physical science. It is the example mostly directly relevant to issues posed in the U.S.A. by the onrushing collapse of our presently ruling economic system, the issue of today posed best to the understanding from the viewpoint of a science of physical economy.

The problem to be overcome, is that, for most Americans, and others, today, science, or even the idea of truth in general, is like road-kill, something you could pick up, or not. To see that as a matter of "free choice," rather than an obligatory matter of fantastic principle, is the essence of the same cult of Sophism which led once-great ancient Athens to destroy itself with its launching of what became the Peloponnesian War. Why the German citizens' notorious, overwhelming vote for Hitler? It was fashionable at the time, like most of the voting, and non-voting done by American citizens during recent times. That Sophism of, "I can choose to pick it up, or not, but if it is fashionable to pick it up, I probably will," is the typical symptom of the tragedy of "Baby Boomerism" in the U.S.A. and Europe today.

So, a viciously corrupt mass-media, largely owned by oligarchical interest, plays a leading role in the mass-corruption of the great majority of the population today.

Consider the following illustrations of what I have just described above.

We have presently, in a large ration of the generation now between the ages of approximately fifty-odd and sixty-odd, is what must be defined clinically as the so-called "Baby-Boomer" generation. This is President George W. Bush, Jr.'s generation of the Americas, of western Europe, and so forth, which has lost what had been a traditional future-orientation of a present, adult generation, to a better life than their own for children and grandchildren. The young-adult children of that "Baby-Boomer" generation see themselves, more or less, as a "no-future" generation, a generation produced by parents who, dreaming collectively like lotus-eaters through middle age today, gave this younger generation a world with no future in it, a world which suggests the title of neo-conservative ideologue Francis Fukuyama's *The End of History*.

That Baby-Boomer ideology is the pivotal "Fishbowl" cultural matrix of the generation occupying most of the leading executive and related positions in government and the private sector's dominant institutions. This generation may also be termed the spawn of the post-World War II utopian cult-project, the Congress for Cultural Freedom. It was this project which prepared what has been called the cultural-paradigm shifts of the mid-1960s,

including the so-called “sex, rock, drug counterculture”: the so-called “68ers.” “Take off your clothes, abandon your brains! Try LSD and other means to throw your mind away!”

In this generation, we of the U.S.A., in particular, see those children of the post-war suburbanite households reared under the impact of the spread of the corrupting influences of the Congress for Cultural Freedom, merged with “White Collar” and “Organization Man” cults of the 1950s. We also see the impact of the sequence of early 1960s events such as the 1962 thermonuclear-missiles crisis, the assassination of President John F. Kennedy, and Robert McNamara’s launching of the official U.S. war in Indo-China. This succession of developments produced the lotus-eaters who have come to run most among our leading institutions today.

The characteristic political effect of the rise of this cultural-paradigm shift, which hit the university students of the middle to late 1960s the hardest from the start, was the shift of cultural values of the U.S.A. from the cultural characteristics of the world’s greatest producer nation, toward becoming today’s intrinsically bankrupt “post-industrial” entertainment society, a slide into a substitute for history known as “virtual reality.”

This acceptance of a realm of virtual reality, as a substitute for the implications of willful scientific and Classical-cultural progress, is the actual “end of history,” widely accepted by today’s Baby Boomers and “Tweeners,” which lends a queer verisimilitude to the naughty Fukuyama’s notion of an “end of history.”

In the U.S.A., among other nations, this domination of the institutions of the nation by an administrative stratum of that pedigree, is coupled with a division of the population between a political-economic upper 20% of power and family income-levels, and a lower eighty percentile gripped by accelerating loss of both real income and efficient political influence over government. This was complicated, during the 1990s, by the use of a manufactured flood of fictitious monetary-financial assets, used to prop up a failing economy, temporarily, with a great show of apparent wealth from production of “virtual reality,” the 1993–2000 so-called “IT” boom, and, presently, the onrushing collapse of the entire world monetary-financial system.

At any point along the line, from the 1964 launching of the official U.S. Indo-China war, through the present time, we could have stopped the farce, and turned back to becoming a real economy once again. The evidence needed to draw the conclusion that that change in direction must occur, was clear. I not only saw that objective possibility of escape from the insanity which grips our world today, but have pled for its adoption over the recent forty years, and what I have said has not merely been heard, but the hearing of it from my voice has been manifestly feared among leading circles of power inside and outside the U.S.A.

itself. Why, if the evidence was so apparent then, was the remedy not adopted, when we still had the efficient resources needed to make that turn safely back to sanity?

The ancient Greeks, speaking from their graves, would cry out silently to us now: “You are, as we were, a tragedy! Your Cheney is your Thrasymachus!” We did not change, because the Baby-Boomer generation was under the control of a “fishbowl syndrome.” We were gripped by a collective “cultural-suicidal impulse,” an impulse crafted by the nuclear-war-bent utopian authors of the Congress for Cultural Freedom (CCF), and by the fears of a youthful generation conditioned by both the impact of CCF brainwashing and the shocks of 1962–1968.

Now, we have come to a new shock, which we ourselves have brought upon us, because we tolerated the drift into self-inflicted ruin which the Baby-Boomer generation merely embodies in its pitiable, intellectually enslaved condition. History has often worked like that.

We often delude ourselves, that our daily choices are actually free choices, when, in fact, they were choices made as by a goldfish habituated to a goldfish bowl. Decisions involving the universe outside that ideological fishbowl, were evaded as, perhaps, “not realistic.” So, those trapped in a maze might think wrongly that their choices leading out of that maze had *not* been a trick played by the designer of the maze. We say, as we wander through that maze, while years pass, and decades pass, “But, our decisions were based on what we have learned from our experience. It was a choice made of our own free will.” It was, in fact, and is a tragedy.

Then, there will now come a time, very soon, when the whole game fails. In the history of such experiences, the prevalent tendency among a people who have been ideologically misled in that way, is that a time comes, when the visible collapse of the whole game that society has played for a generation or more, creates the opportunity, even a last chance, for a people to change their ways. Often, in history, successful changes of that kind appear only as “last-minute” changes, as we lurch now at the brink of the chasm of the general global breakdown-crisis of the existing world monetary-financial system.

3.3 Reaching to the Future

Given, that each experimentally validated hypothesis thus established as a universal physical principle, is both a thought-object and a “dimension” of a Riemannian manifold. Each of these enables mankind to increase our power in the universe, per capita and per square kilometer of our Earth’s surface-area; but there is something more. The addition of such principles to our repertoire of practice changes the *characteristic* combined effect of society’s action on the universe.

This characteristic's effect is typified by the example of the development of electrical power for such applications as the program of U.S. rural electrification launched under President Franklin Roosevelt. Even with no additional change in the behavior of the relevant farmers, the productivity of that farmer was increased. This is merely typical of the generalized effects of applied scientific-technological progress, as expressed typically by an increase of the productive powers of labor of a person without any internal change otherwise in that person's practice.

The same principle is illustrated in a different way as the effect of improved education of a population, on the productivity of that population.

The same principle is illustrated by the indispensable role of government's long-term capital investment in making improvements in basic economic infrastructure in the public sector, on fostering increased per-capita productivity within both the individual operatives of the so-called private sector, and the firms which employ them.

This point, which may be recognized as a matter of mathematical-physical principle from a careful reading of Riemann's 1854 habilitation dissertation, is also expressible in other terms of reference. Contrast the case of a typical "fishbowl syndrome" with a "competing" manifold of principles ("thought-objects") which is, both, more or less freed of the delusions and illusions of the relevant "fishbowl syndrome," but which, unfortunately, excludes consideration of some of those certain universal principles from among those which are contrary to the characteristic of the relevant "fishbowl syndrome."

Put the same, latter point in other terms. The usually most crucial feature of "fishbowl syndromes" encountered currently, is that they, such as the famous *New York Times* style manual, are coherent with a banning of actual individual creativity.¹³

As I have already emphasized, the crucial issue of society's history is the importance of "dumbing down" subject populations as a part of the social control of the relative human cattle by the reigning caste. Hence, the most important feature of nearly every "fishbowl syndrome," is its characteristic effect as a mechanism of dumbing-down, even virtually destroying the cognitive impulses of the member of that stratum of the population.

¹³ The virtual brain-damage done by modern standards of English prose-style set by such institutions, including academic ones, is the way in which seemingly aseptic tricks of style echo the bestial Mr. Thomas ("Old Hob") Hobbes' determination to outlaw metaphor, and irony in general. It is precisely Classical irony not symbol-mindedness!—which is the means by which actual ideas are conveyed between author and audience in Classical drama, poetry, and prose. These forms of irony, in written prose, correspond to the musical shifts which the use of a mark of punctuation, for example, conveys to the reader. A person who is conditioned to relive the practice of such contemporary style manuals is a person who, in my extensive observation of this phenomenon, is crippled in their ability to think clearly, especially about important ideas of principle. They tend to be "blocked" against thinking any new concept in which they are not drilled during their childhood and academic experience.

This latter aspect of the matter is one of the keys to the rise of the U.S.A. to its position of relative moral-intellectual advantage politically over the nations of other regions of the world. The hostility to aristocracy which is characteristically American, is an expression of a tendency toward intellectual freedom lacking even in otherwise admirable cases among western European cultures, where the influence of the aristocratic caste, such as Germany's "schicky-mickeys"—the *Schickeria*, or the French *chic*—is a typical force of moral corruption. Such pro-aristocratic pretensions, even when cautiously muted for political appearances, are buried within the "fishbowl syndrome" of even such as the trade-union or kindred militant. In this respect, the idea of individual freedom, as a political characteristic of our republic's culture, is a leading positive factor in the fostering of popular creativity and related tendencies within the population generally.

There are, of course, tendencies toward the importation of something like a European oligarchical tradition into the U.S.A., but this is, speaking historically, distinctly un-American, as contrasted with the shamelessly naked oligarchical Hispanic-cultural legacy traditionally expressed by a certain, morally degenerate, anti-American and often savagely anti-American, stratum in Central and South America. The influence of the Synarchist (e.g., fascist, Nazi) organizations within Mexico and other parts of Central and South America, takes its root in the masturbatory Quixotic fantasy-life built around the gruesome fairy-tale concoction depicting a former Habsburg glory of Philip II's Spain.

Unfortunately, the witch-hunt atmosphere launched under President Harry Truman, and continued by that utopian pro-war faction associated with the legacies of Allen Dulles and James J. Angleton, has been the political cudgel which has beaten the spirit of sturdy independence of the individual out of much of our own population. The emergence of the cruelly diminished condition of life of a lower eighty percentile of the economic strata of our population, has been combined with recurring "police-state" tendencies, to turn the great majority of our citizens into virtual political sheep, who vote, if they bother to do so, as beggars trading votes for favors, rather than citizens occupied by the intent to compose effective government in the national interest as a whole.

These and other considerations working to similar effects, typify the decisive role of the conditions of the nation as a whole, which, in turn, create the environment which determines the motive for, or against national policy and potential impulses for improved productivity in the individual person and individual private enterprise.

Economy is not competently measured as the sum-total of individual scores. Ignorant opinion usually presupposes that national product is the sum-total of the product of individual enterprises. Even the Leontief approach to national product and income studies suffered from the effects of that error in method. It is all of the "factors" of national life,

taken as a whole, as these impact individual firms, individual localities, individual households, and individual firms, which determine the impulse for productivity or relative stagnation in the individual, the individual family, the individual enterprise, the individual community, and, thus, the nation as a whole.

This connection is made clearer, but returning here, to develop a point made a short space above.

All of mankind's gains, beyond the level of culture of a species of higher ape, are the fruit of that which distinguishes the human individual from a beast, the power of cognition, on which I have concentrated attention in this report. What is to be measured in society, as the performance of society, and the contribution of the individual to that performance, is the action of the sovereign creative impulses of the individual person to the effect of increasing mankind's power in the universe. It is the actions by means of which this benefit is accomplished, which is the proper concern of all studies of individual and mass human behavior.

The foremost consideration of any society which intends to succeed by such standards, is the development of those cognitive powers of the individual mind through which society's generation of discoveries of physical-scientific and Classical-cultural principles are produced, nourished, and spread. The functional implications of this are expressed for society as a whole as the effect of man's mastery of these matters of universal principle. The effects should be so measured.

If we are to survive now, our people must clear their heads of that mass of ideological rubbish to which they have become addicted, especially since the death of Franklin Roosevelt.

4. The Benefits of Animation

At this point in the present report, there are two things to be portrayed by economists. First, the way in which the world was brought, over forty years of moral decay in economic policy-making, into the presently onrushing general breakdown-crisis. Second, how we must monitor the kind of policymaking needed to bring about a general physical-economic recovery. Let us begin this section of the report by reviewing the situation, again here, from that vantage-point.

As I have emphasized earlier in this report, not only the U.S.A., but the world is teetering, at this instant, on the slippery edge of the greatest monetary-financial collapse in history. The threat of a chain-reaction collapse into virtual chaos, is imminent. This crisis has two principal aspects. One aspect is monetary-financial; that is the imminent collapse before us,

as the world as a whole. The other aspect is economic, by which I mean real economy: physical economy, not monetary or financial economy.

The general lesson to be applied, is that without net scientific-technological progress, as measured in physical terms per capita and per square kilometer, not financial units, any economy is in a process of threatened collapse through attrition. From that vantage-point, the deliberate wrecking of the industrial economy of the United Kingdom, under Prime Minister Harold Wilson, during 1964–1967, was clearly the pace-setter for the wrecking of the world economy at large. However, to locate the principal causal factors in the presently ongoing international collapse-crisis, let us look at the result of a long-term trend of the economy of the Americas and western Europe, in particular, since the Anglo-American-led cultural-paradigm shift, downwards, of the 1964–1968 Vietnam War interval.

As I have stressed from the outset of this report, although the two still-ongoing threats, financial and physical, to both the U.S. and world economies, are tightly interrelated; there is no simple statistical correlation between the monetary-financial and physical-economic trends. Thus, on the one side, there is what we produce and consume in the physical sense. On the other side, there are the income and expenditure of monetary-financial processes. Over the recent decades, the two kinds of processes, while interrelated, have been less and less rational in the apparent form of their interactions, especially since changes introduced by Federal Reserve Chairman Alan Greenspan in the aftermath of the October 1987 U.S. stock-market crash. The gap between the two processes, now a vast and rapidly growing gap, has been precariously bridged by a strange financial-economic category called “virtual economy.” The virtual monetization of a form of gambling side-bets known as “financial derivatives” or “hedge funds,” fills up a large part of the gap between real and virtual.

Recall that, in the nationwide TV broadcasts which launched my 1984 campaign for the Democratic Party’s Presidential nomination, I pointed out the fraudulent reporting on national income and inflation which had been prepared under prompting of the U.S. Federal Reserve System then. By Spring 1987, I foresaw and broadcast widely the probable collapse of the stock-market to occur, as it did, in early October of that year. Not only did that happen then as I had forecast, but as incoming new Federal Reserve Chairman Alan Greenspan replaced outgoing Paul Volcker, the Federal Reserve embarked on a lunatic binge more reckless than Volcker’s October-November 1979 launching of the implementation of his doctrine of “controlled disintegration of the U.S. economy.”

In an October 12, 1988, Berlin press conference, I warned of the prospect of an immediately impending collapse of the Soviet system. The videotaping of that press conference was presented as part of a U.S. national TV broadcast that same month. In 1989, the collapse occurred in the manner of which I had warned in that broadcast. A relatively immediate

general collapse in the IMF system itself, was averted at that time by the offset of the vast looting of the former Soviet bloc, a looting made possible both by the 1989 collapse of the Soviet-dominated eastern Europe bloc, and by the ensuing 1989–1992 collapse of the Soviet system itself. The effects of that looting are to be seen, very plainly, in the physical territory of the former Comecon today, as presently reflected in the states of the eastern regions of Germany. The subsequent vast looting of the territory of the former Soviet bloc effectively postponed the impending collapse of the “West” for about a decade, but only until now.

Contrary to popularized mythology, a collapse such as that already ongoing now, does not appear as a single event. It occurs as it has during recent weeks. The entry into the actual collapse-phase, begins as a state of uncertainty and emotional turbulence, and an increasing sense of rage, among relevant leading institutions, especially the leading financial circles which are desperately attempting to cling to a wishful denial of that felt change now underway. It occurs, in other words, like a messy transit of “the sound barrier.”¹⁴ It is, in short, the period of turbulence between a period of confidence in a apparently linear trendline, and the approach to a total break in what had been felt to be the prevalent trend up to that time. As is typified by the recent eruption of the rising tide of successive Monday demonstrations in the Germany, the world has now entered that intellectual and emotionally turbulent phase of apparent uncertainties which strikes, like the unsettled feeling that separates pleasant weather from the fast-approaching, brutal storm. That is where the world is at the time of the oncoming U.S. Republican Party’s New York nominating convention.

In short, for those who understand history, the great monetary-financial crash of 2004–2005 is already here.

The result we are experiencing in that way, is, that nearly nine years after I first presented publicly what I have called my “Triple Curve,” in a January 1996 Presidential campaign address, the conflict between the world’s monetary-financial system and the real, physical economy, has reached a state of hyper-instability, a point at which the combined system can no longer continue to exist in its present form.

The only option for survival available to sections of the world such as the U.S.A. and western and central Europe today, is to put the IMF’s and World Bank’s sick-sick-sick, hopelessly rotten present monetary-financial system into government-managed bankruptcy reorganization, and take measures echoing those precedents, established by U.S. President

¹⁴ Cf. *Riemann’s Werke*, “Über die Fortpflanzung ebener Luftwellen von endlicher Schwingungsweite,” pp. 157–178. This paper has much broader implications than simply as Riemann’s original discovery of the mathematical-physical principle of the sonic boom. As I emphasized at the close of the 1970s, and later, it provides deeper insight into the way in which a general financial collapse, such as the present one, may occur. At my prompting, an English translation of this Riemann paper was produced by the Fusion Energy Foundation.

Franklin D. Roosevelt, which both saved the U.S. economy, and brought war-ruined western Europe, and elsewhere, into the post-war economic recovery which was aborted by relevant policy changes in practice introduced during the 1964–1968 interval.

The Lesson of the Triple Curve

Recall the image which I presented publicly in January 1996, and compare that with the updated image I introduced during my 2004 campaign for the Democratic Party's Presidential nomination (**Figures 6a and 6b**). In the first of these two pedagogical figures, which I had composed in late 1995 as part of a report submitted to a Vatican conference, I defined three interacting factors to be considered. First, the accelerating decline of the physical economy. Second, the accelerating expansion of financial aggregates, and, third, an expansion sustained by accelerating monetary emission.

In the second of the figures (Figure 6b) published widely during the period of the 2004 pre-Presidential campaign, I emphasized that the rate of generation of monetary aggregate was overtaking the rate of generation of apparent financial aggregate. The 2000 partial collapse of the IT financial bubble, typified the reality that a more advanced state of degeneration of the world's monetary-financial system had been entered. It is the latter configuration of interacting trends, which describes the conditions for that general breakdown-crisis of the world economy which is in an advanced state of maturity at this present time.

It has been the relative discontinuities among these three trends (physical economy, financial expansion, and monetary expansion), which have defined the systemic character of an approaching world monetary-financial crisis since, actually, the world monetary reforms of 1971, 1972, and 1975, and in qualitatively more advanced expressions following the 1979 appointment of Paul Volcker as Federal Reserve Chairman.

So, when we survey the U.S. economy over the 1964–2004 interval, we see what has become a cumulatively awesome amount of accelerating, long-term trend of attrition in all physical factors of an economy which has been transformed from the world's leading producer nation, into a dying and decadent, "post-industrial," entertainment society. Once all of the mumbo-jumbo about the miracles of "information society," or what-not, is put in its proper perspective, as essentially irrelevant, look at the massive net deterioration in the physical condition of the whole U.S. economy, and all of its people, especially during the decades since that 1971–72 change to a "floating-exchange-rate monetary-financial system," which was launched, at the prompting of Nixon advisors George Shultz, Paul Volcker, and Henry A. Kissinger, under President Richard Nixon. We witness, since then, an already-accelerating rate of net physical collapse which was accelerated still more by the savage measures launched under the Trilateral Commission's Carter Administration czar Zbigniew Brzezinski.

When we put aside all of the trimmings of monetarist mumbo-jumbo and double-talk used by the spin-doctors of our contemporary academic Laputa, and look at the hard physical-economic facts, we have been a sick, sick, sick, and sicker nation, a nation presently at the fag-end of its options for continuing in this way.

As I have already emphasized these features of the physical-economic landscape, if we then seek to explain the increasing physical impoverishment among the lower eighty percentile of our family-income brackets, and the virtual financial bankruptcy ripe to break out among the upper twenty percentile—on the moment Federal Reserve Chairman Alan Greenspan’s real-estate-mortgage bubble pops, for example, it is clear that the widely publicized financial data is wildly fraudulent. Yet at the same time, even the financial sector tells us something, especially when we look at both the financial debt carried by persons and economic entities, and also the much vaster, never-payable debt used in areas such as financial derivatives, to create the fictitious assets used to create a desperately fraudulent image of financial growth. Look carefully at these efforts to conceal the onrushing underlying deep bankruptcy of most firms and households.

4.1 Managing a Recovery

Strip away the cooked books and the money-figures generally, and look at the physical realities. Even a rule-of-thumb glance at the changes in physical realities for all of the territory and population during approximately thirty years, shows us a sick physical economy, now at the brink of threatening to actually die, unless we suddenly change our ways.

The most conspicuous chunk of the physical-economic collapse, has been the outcome of cutting government and related budgets in ways which have run down basic economic infrastructure at the Federal, state, and local level over the past three decades. This has been done largely by cutting relevant programs, or simply treating as a “tax saving” the money which should have been spent to prevent essential facilities from turning into garbage. The political principle appears to have been: “We must, after all, balance our budgets, if not our minds.” The evidence in this quarter is, that we did not “save” by cutting back on these budgets; rather, we lost an essential limb of our nation’s economic life, like selling off the herds to save the land we leave idle and wasted in that way.

Look at our water-management systems: Federal, state, and private, on which the maintenance of the conditions of life depends. We save in the budgets, but we lose more and more of the essential limbs on which our nation walks. Look at the national railway system. Look at the number of hospital beds available. Look at the collapsing infrastructure of our national system of generation and distribution of power. Look at the map of the nation; see what essential wealth has disappeared from the landscape in this way.

Do we make the economy more efficient, by substituting trucking for inter-city, inter-state rail? Only by making rail so very inefficient, that we have no option but to jam our highways with desperately underpaid truck-drivers, and turning our rush-hour superhighways into virtual parking-lots. Do we make life better, firms, cities, and states, more efficient, by allowing Enron-like swindles, which loot the consumers of power, loot and destroy the existing generating and distribution networks, and drive the price of power up to the point of triggering chain-reaction collapses in economy through power shortages, unreliability of delivery, and prices which bankrupt the cities, states, and consumers?

Look at the fools we have become, by “outsourcing.” We propose to save the cost of our nation’s consumption, by eliminating the farms and factories which used to employ the people, and to support the local communities. We political geniuses have done this to ourselves, as a result of the stated intention to lower the price (and quality) of purchases we intend should be made by the people we have prudently dropped from the payroll, and to bankrupt the profitable, taxpaying firms which have been put out of business in this way. If we were not lunatic enough to do this to ourselves, we voted for a lunatic for Congress, or some kindred post, who would do it to us anyway.

Overall, we have a vast loss of essential basic economic infrastructure. We have lost essential industries, in a way which transforms vast areas of the nation as if an invading enemy has come in, like a locust-horde of carpetbaggers, and hauled away most of those things we needed to produce a living for ourselves.

Who could have been the invading enemy, who did this to us? Who drove us insane in this way?

Much of this ruin of our nation and of most of our people we did by legislation enacted in the Congress or in the state legislatures. Imagine the spy from outer space, writing his report to back home: “Americans are insane! Don’t come here; we might contract the disease that has made them mad.”

A lesson copied from some of those fundamentals of modern physics practice, to which we have referred in earlier parts of this report, will help answer these kinds of questions. A few crucial observations on the matter of relevant principles of physical science are needed, and supplied to situate the description of the method of reporting used in the indicated forthcoming series of reports.

Since we can no longer trust the kinds of financial and related methods of accounting used during the recent thirty-odd years, how shall we direct and monitor the urgently needed economic recovery? How shall we measure performance?

What Must We Measure?

The problem on which to focus attention at this immediate point, is to make clear the difference between assuming that the real-life connection between two dots is linear, and recognizing that what is to be adduced is precisely that “non-linear” action which actually causes the transformation of the system from a prior to subsequent state. Only very foolish people choose to hike the shortest distance between the opposite sides of Antarctica. This matter, of “connecting the statistical dots,” demands correction by mastering the challenge of animation.

Take a lesson from Johannes Kepler’s uniquely original discovery of universal gravitation, and contrast Kepler’s genius with the foolish idea of the Galileo Galilei, who attempted to plagiarize Kepler’s discoveries.¹⁵ Galileo’s ignorance of the principles of competent scientific practice, was exposed by his effort to use the nonsense-notion of linear “action at a distance” to explain away the crucially determining feature of Kepler’s discovery of the intrinsically “non-linear” determination of the relationship known as gravitation.

As I shall show, immediately below, this example points directly to the importance of the use of animation, rather than static comparison of a succession of cross-sectional statistical data, as a way of conveying *the principles of action* of economics, and the correct use of relative short-term data to effect comparative performance of national economies on the larger scale. Linear comparison of simple data, as in trend-lines, at successive points, is equivalent to the pseudo-scientific method associated with “action at a distance.”¹⁶ Animation is a notion of continuing action which is often not linear, in progress during “the interval between the dots,” rather than mere distance traversed. When this distinction is properly understood, as its application designed, and properly used, it is a way of circumventing some of the worst of those tendencies toward reading the corrupting fiction of “action at a distance” into statistical reporting.¹⁷

¹⁵ Kepler had a correspondence, on the subject of music, with Galileo’s father. The hoaxster Galileo Galilei himself, the son, was in service as a lackey to his master, Paolo Sarpi, and was the teacher of Thomas Hobbes.

¹⁶ Competent European scientists were confronted with the need to be convinced of Kepler’s astronomy, in opposition to that of the Newtonian followers of Galileo, when Carl F. Gauss discovered the orbits of the asteroids Ceres and Pallas. Cf. Jonathan Tennenbaum, Bruce Director, “How Gauss Determined the Orbit of Ceres,” *Fidelio*, Summer 1998.

¹⁷ It is notably relevant, that this is the issue posed by Kepler which led Gottfried Leibniz to create the infinitesimal calculus, a discovery which led to the Leibniz-Bernoulli discovery of the universal physical principle of least action, which was already implicitly begged by Leibniz’s first (1676) presentation of his original discovery to a Paris printer. A common trick of economists and others today, is to fake their forecasts by resorting to fallacies of composition which selectively, and maliciously exclude relevant categories of data from the composition of their calculated projections.

In contrast to appropriate methods of animation, Galileo's crude, but widely imitated blunder, was to presume that motion must be measured as action-at-a-distance between bodies in empty space. We, today, would emphasize that actions reflected by the space of sense-perception pertain to a shadow-world, rather than the real world of the Gauss-Riemann complex domain.¹⁸ For us, as for Gottfried Leibniz's pointing out the folly of the treatment of motion by Descartes, and also the related folly of Galileo, Isaac Newton, *et al.*, causality lies in the real domain, the *physically*, as distinct from *merely formally* complex domain, which reaches beyond the shadow-world of sense-perception.

To understand the nature of this pseudo-scientific blunder of Galileo, Descartes, and empiricists generally, as this blunder applies to the work of the economists, go back again to Kepler's astronomy. Pause here to review some relevant, important elementary facts about modern European culture's scientific methods, and those of Classical pre-Aristotle Greece.

Kepler's uniquely original discovery of universal gravitation was associated with a set of phenomena, among which three are sufficient to illustrate the issue of principle involved: a.) that the planetary orbits (e.g., that of Mars) were elliptical; b.) that progress of the planets in their elliptical orbits was not at a linearly uniform rate along the orbital pathway; c.) that the constantly non-constant rate of change of orbital velocity along that pathway, was in correspondence with measurement by observation according to a principle of "equal areas, equal times," respecting the area defined by the sector marked by the center of rotation at the Sun.

These discoveries were among the central prompting features of the two notable challenges which Kepler left to "future mathematicians": a.) to define a general theory of elliptical functions; b.) to establish an infinitesimal calculus. The first task was mastered, in essentials, by the work of mathematical physicists from Gauss through Riemann's work on Abelian functions. The second discovery was produced, uniquely, by Leibniz, as an infinitesimal calculus, and a related system of natural logarithms, with the catenary-linked characteristics of a universal physical principle of least action. This latter was done with some collaboration with Jean Bernoulli.

The related work of Gauss through Riemann, and their collaborators, was based, in turn, on two leading features of the work of Leibniz: his uniquely original conception of an infinitesimal calculus defined by a universal physical principle of least action, and what he defined as *Analysis Situs*. The role of *Analysis Situs*, as developed further by Riemann, is a crucial contribution toward mastering the conceptual challenge of dealing with the notion of

¹⁸ The concept of a Gauss-Riemann domain is presented by Gauss himself in his 1854 habilitation dissertation.

physical action within the domain of physically efficient thought-objects. As I shall indicate below, this use of *Analysis Situs* is indispensable for competent economic analysis.¹⁹

This does not mean that reports supplied to the layman-user present these sophisticated considerations of scientific method to that layman. It does mean that the way in which the crafting of seemingly simple forms of reporting must be governed by an understanding of the practical implications of these deeper principles. The patient needs the treatment he needs to understand; he must be able to take for granted the relevant deeper learning and experience of the physician. It is a very foolish patient who chooses an amateur over a qualified physician, with the excuse: “He must not do anything I could not fully understand.” It were past time that the practice of economics went a bit deeper than former Texas Senator Phil Gramm’s prescription for a common-sense chat between two bungling amateurs, one of them himself, gossiping in a kitchen.

All of these deeper considerations for both modern astrophysics and physical economy, have their known origins in the leading role of what I have addressed earlier here, as that physical-geometry of spherics which dominated pre-Aristotle Classical Greek physical science. Typical—and also crucial!—is the famous, much-cited aphorism of Heraclitus: *nothing is permanent except change*. Kepler’s treatment of the orbital characteristics of the planetary system, is a prime example of that to which Heraclitus referred. The celebrated constructive solution for doubling the cube, by the Pythagorean Archytas, typifies the method of Spherics which the Pythagoreans derived from Egyptian astronomy.²⁰ No linear solution is possible in this case.²¹ The significance of this, as already shown implicitly by the work of Kepler, is that the Solar System is not organized on the basis of the working assumption of pair-wise relations among bodies in empty space, but rather the pathway of physical least action defined by the larger physical domain within which the motion is situated.

Thus, Kepler writes of an efficient quality of *intention* as moving the planet along its perceived orbital pathway. This use of *intention* is, as he makes clear within the same work,

¹⁹ Cf. G. Leibniz, “Studies in Geometry of Situation,” *Gottfried Wilhelm Leibniz: Philosophical Papers and Letters*, Leroy E. Loemker, ed. (Dordrecht: Kluwer Academic Publishers, 1989), pp. 249–258. See, Bernhard Riemann, “*Theorie der Abel’schen Functionen*,” in *Bernhard Riemann’s gesammelte mathematische Werke*, H. Weber, ed. (New York: Dover Publications, 1953), N.B. pp. 88–96. See also, “*Fragment aus der Analysis Situs*,” pp. 479–482.

²⁰ Archytas of the city of Tarentum in Magna Graecia, was associated with Plato at Syracuse. His method of constructive solution, which has been adopted as a pedagogical standard by the LaRouche Youth Movement, has the special distinction of pointing directly to the future Gauss-Riemann complex domain, and, implicitly, to the connection between the complex domain and Leibniz’s work on the related subjects of the physical significance of the catenary (as distinct from the cycloid), and the role of the complex domain in the notion of physical least action.

²¹ The reported solution by Plato’s friend Archytas lies implicitly within the complex domain.

equivalent to the notion of universal physical principle. He refers to God's intention as the continuing, rather than "percussive" source of the motion. By "God's intention," he signifies that he means precisely what I have identified here as universal physical principle.

That said, now consider the motion connecting two successive states of an economic process, taking into account the "factors" which I have summarized in the foregoing portion of this section of the report. Now, *intention*, as Kepler employs that notion, assumes an added, specifically human dimension of willful action. This amplified notion of intention then serves as key for understanding the importance of using properly conceived animation, rather than linearized, accounting-style reports, for grasping the essentials of the present economic processes.

The distinction between *the efficiently continuing action of intention* and the merely percussive effect of *opinion*, is crucial. Intention, as used in the English translation of Kepler's work, signifies a thrust, as distinct from the notion of target associated with mere opinion. In Classical, pre-Aristotle Greek, the notion of *intention* associated with the work of Kepler, has the significance of the exertion of *power*, using "power" in the sense of the Classical pre-Aristotle Greek *dynamis*, as opposed to the mere effect which the inferior intellect, Aristotle, called "energy."

The way in which the distinction can be portrayed visually is animation: on the condition that this is done with the proper understanding of the principles of efficiently continuing action, which must be made clear.

The example often used in the educational program of the LaRouche Youth Movement, is the case of Archytas' solution for doubling a cube by methods of construction, rather than arithmetic approximation of the length of the cube's side, or of the diagonal of the surface of a face, or of the cube as a whole. Once again, as said before, the solution, as reported according to Eudemus, exists ontologically only in the domain of spherics: in fact, ontologically, in the complex domain. I have adopted this pedagogical example, because it not only shows most clearly the significance of Carl Gauss's exposure of a relevant mathematical hoax by Euler, Lagrange, and others, but shows exactly why we must not be lured into generally accepted methods of classroom mathematics instruction at the secondary and higher levels today.

Thus, even though charts are used in *EIR's* reporting by help of visual aids, *the crucial points to be emphasized imply the use of a unit of animation, rather than a linear displacement, as a representation of the concept of the action which corresponds to an expressed principle of economic transformation.*

Fortunately, animations, properly constructed, help greatly in telling their own story even to the person with relatively no special mathematical training. Understanding the animation is relatively simple, as our readers will soon agree; designing and constructing it is not so simple.

4.2 The Functional Role of Thought-Objects

For one last time in this report, we must return to look at some “tough stuff.” If we care about the future of our nation, and of our planet, we will accept that challenge.

In the simplest example of the method of representation being employed, we have the following.

For purposes of first-approximation, assume that there are an unknown number of potential thought-objects, each representing what we might presume, for purposes of approximation, to be a knowable, single universal physical principle in the universe: a *thought-object* strictly defined. Designate this as m potential thought-objects. Assume that we already know a portion of m , represented by n thought-objects. Now, for pedagogical purposes, represent the physical characteristic action within the physical-economic process as a whole by the transformation of n to $n+1$ employed principles (i.e., scientific-technological progress, in fact). The notion of such a transformation of the whole matrix then serves as the intellectual image of the characteristic form of action in the economic process considered. *Nothing is permanent but change.*

For pedagogical reasons, this does not yet take into account here those often-assumed principles which are, in fact, not only false, but are irrelevant to matters considered here, which are merely distractions usually included in the assumptions made by even the trained professional specialist.

Our subject then becomes the change in the physical characteristic of the process as a whole, reflected by the introduction of a transition from a domain of n to $n+1$ principles. All physical transformations in the ***EIR*** reports to be issued will represent that form of action, whether that fact is obvious to the reader, or not. This means, that the connection between two successive states of the economy, implies the addition, or subtraction of some respective number of principles so defined. For example, the decline of the steel industry in the U.S.A., during the 1972–2004 interval, represents an action (a change of intention) of this generalized, indicated, nominal $[n, n\pm 1]$ form.²²

Do not be frightened by the required use of language immediately above. This is a very practical problem arising in any effort to understanding the present U.S. economic crisis.

²² This is to be read as an illustrative statement of the form of the problem, without suggesting the form of the solution. The solution is, in each case, in the conceptual form of the notion of *Analysis Situs*.

The addition of an applied new principle to an economy changes the characteristic form and quality of action in the economy as a whole. The economy shifts to a higher state, with the result that all actions, whether changed or not, are more effective because of their association with the active presence and influence of the new technology. The introduction of electrification by Edison and others in the U.S.A. and Germany, is a stunningly appropriate example of this. However, the elimination, or even diminution of use of previously standard technologies, as we see in the collapse of steel production in the U.S.A., has a reverse effect, lowering the productivity of labor throughout the economy as a whole, because of the relative loss of the impact of that technology. (See Figures 1a–d, above.)

“Gentrification” of Pittsburgh, Pennsylvania, is one of the factors in creating the present economic-financial crisis of the state as a whole. The entire state has been “downshifted” in the general economic direction of the “stone age” by the measures taken as part of the same trend. The loss of the combination of locks and dams over the past forty years, combined with the failure to act on building the NAWAPA water and power system, combined with the failure to develop related management of the Missouri and Upper Mississippi systems, comes now at a terrible price for not only the inhabitants of those regions, but the nation as a whole.

To grasp this idea, virtually every reader of the type which I know to exist, even among the putatively best-educated, does not yet grasp the most essential of the implications of what I have just said.

Much of the widespread ignorance of the importance of such examples as I have just presented, reflects profound incompetencies in popular political opinion, incompetencies for which much corruption in university and other scientific instruction has been a most significant contributing factor.

For example, it were sufficient to hear an all too typical mathematician or physicist engaged in a fumbling way, how and why he stubbornly defends Euler and Lagrange against the devastating attack in Gauss’s 1799 paper defining the issue of the complex domain. Not only does he not know what he is talking about; he is hysterically committed to prevent himself from discovering what it is he is talking about! He is afraid of the rat-like tendencies among his peers from the ranks of the empiricists and positivists. He has years of investment in his run through the academic rat-mazes in coming to believe that the desired cheese will be delivered in response to his dissertation. That, certainly not the truth, is the immediate issue posed to him by what he regards as the insolent suggestion that Gauss was right about Euler and Lagrange. The problem is not that the argument of Gauss is not understandable; Plato’s slave-boy could have understood, sooner or later. Theaetetus certainly did. The usual

academic's problem is that he desperately wishes not to know. He did not attend university to know the truth, but to make a career. Typical fishbowl-syndrome stuff!

The mental block which tends to prevent even highly educated people from understanding even the ABCs of real economics, is the persistence of the slave-like mentality expressed by such forms of philosophical reductionism as empiricism, such as poor wretched Newton's putting his signature onto a denial of the existence of that principle of method which separates man from the apes: *the principle of hypothesis*.

The Newton, or a kindred sort of addle-headed type portrayed by the works attributed to him by his theatrical managers of that time, can think of motion only in terms of objects being hurled through empty space. The proven incompetence, by France's Arago and Fresnel, of Newton's theories of light, expresses this reductionist folly of all of Newton's putative output, as a characteristic of the fanatically reductionist thinking of either Newton himself, or some ghost-writer, such as Hooke, who might also have cooked up that particular folly attributed to Newton's name. This same lunatic assumption is the blind assumption of belief expressed by the way in which most people use, and interpret statistics today.

This brings us back to the subject of thought-objects as such. What is a *universal* physical principle? It means the intention of the scientist, for example, that this is a principle of efficient action in the universe at large, which exists to act in every part of the universe at all times. This, miraculously perhaps, includes the vast empty spaces within Galileo's and Newton's alleged thinking. Remember! The thought-object of Riemann has endless extension in space and time; the nature of the hypothesis and experimental proofs involved define that thought-object as embracing universality in space and time. There is no non-physical empty space in our universe, except in the minds of ignorant or, worse, miseducated people.

A remarkable kind of idea, but not some fanciful one!

A Physics Lesson from Theology

To grasp the significance of the way in which this notion of thought-object applies to physical science, look to a Platonic view in Christian theology, to notions such as the concept of "the simultaneity of eternity." Society has gained access to this concept along the following pathways of investigation.

Man is the only living creature which is capable of both developing a true hypothesis and developing that quality of experimental proof of an hypothesis which defines a universal physical principle. This capacity of man, which prompts his recognition as being in the image of the Creator, is, in a certain manner of speaking, *infinite*. A discovered principle, by the nature of its discovery and experimental proof, reaches backward and forward in time,

and throughout the known universe. This outreach lies in the nature of the principle itself. The transmission of such principles reaches back through preceding generations' contributions to the development of such knowledge, and radiates without predetermined limits into the cultures of the future. Man's ability to recognize this distinctive aspect of his own nature, his distinction from the beasts, is one of the synonyms for the term "immortality."

For all we know thus far, there has been no discovered universal physical principle, discovered by man, which did not exist in the universe beforehand. Man, insofar as we know, does not create new universal principles in what present convention regards as physical science as such. However, man's new discovery and use of such pre-existing principles, changes the universe. The adoption of such discovered principles, and their appropriate addition to the repertoire of human practice, transforms the universe, by increasing our power within it. So, the Pythagoreans *et al.* understand man's discovery of such powers, powers including universal gravitation.

This notion of powers defines the human individual's intrinsic immortality, as **Genesis 1** might be read as stating implicitly. The discovery and transmission of these powers by individual persons in society, affords the fragilely mortal individual person an efficient reach into the past and future of all humanity. Such is the beauty and joy of studying all human history, and pre-history, from this vantage-point.

Through reaching out to grasp this sense of immortality, that man escapes the tragic, self-inflicted fate of a Hamlet. This sense of connectedness to past and future generations, in this way, is the natural inclination of the person who has risen to be free of the sense of being to enjoy the sublime sense of martyrs such as Jeanne d'Arc or the Rev. Martin Luther King, the freedom, not from death, but from the beast-like consequences of death. Whereas a typical Aristotelean or empiricist is, relatively speaking, a human form of cattle. For those who shackle themselves with the role of human cattle, this is not clear; they are imprisoned morally by their own sense of mortality, as Shakespeare's Hamlet was. Thus, it were evident to such a Christian, as this is affirmed by the ritual of Eucharist, that the crucified Christ lives efficiently in the simultaneity of eternity as much as in the flesh. Hence, priests who teach lies should beware!

So, to the degree that the human individual is developed to recognize the implications of being a creature whose primary relations are to a universe of the simultaneity of eternity, he becomes capable of thinking in ways comparable to Plato, Cardinal Nicholas of Cusa, Kepler, and Leibniz. Not only is he capable of thinking in that way, but, his way of thinking about the universe is right, relatively to all reductionist alternatives. For the reductionist, therefore, the idea of a universal physical principle is an object of the senses, not thought.

The reductionist's intellectual incapacities are not a short-coming of his nature, but an error inherent in his mistaken, reductionists' choice of adopted nature.

Essentially, in spirit, Kepler would have agreed.

The Dirty View of Earth

So, in the case of Kepler's work, modern physical science could not have progressed, except as the empiricists, who enjoyed the advantage of support from political authorities, stole Kepler's discoveries without admitting the way in which they were produced. As the circles associated with Isaac Newton copied parts of the work of both Kepler, on astronomy, and Leibniz on the calculus, those forgers tried to conceal their plagiarism by seeking to make it appear that these discoveries had been crafted by their method, not the actual method of the discoverer. On that account, they sought to cover their fraud by violently defaming the discoverer.

This is key for understanding the issue between gravity as a determining intention governing the orbits, and the efforts of the plagiarists of Kepler's work to reconcile the fact of the orbits with the notion of action at a distance. A truly universal physical principle operates as an existing universal within the simultaneity of eternity. It is in that way, that the orbit of the planet precedes the planet's motion as following that orbit.

However, contrary to the Aristotle denounced by Philo of Alexandria, the "perfection" of the Creation of the universe is not that of a fixed universe, such that the Creator has rendered himself important forever after by what is built in from the start. It is the ongoing process of Creation which is perfect, which is Leibniz's "best of all possible worlds." And, we are a part of that process of continuing Creation, a participation which we express by the discovery and realization of discovered universal physical principles. We are, thus, immortal, acting so in past and present, as through our brief excursion into the lesser realm of mortality. The part of the mind which we have, which inhabits, and uses, but is not limited to the biological mind, is able to recognize its relationship to the universe, and is therefore able to know, and also to prove experimentally, that such universal principles are indeed universal within the span of the simultaneity of eternity.

In that sense, a thought-object is the way in which the individual human mind discovers, proves, adopts, and employs the notion called a thought-object, as a kind of intention which has universal extent and powers, including over what naive sense-perception considers "empty space." That comprehension of universal physical principle, as *intention*, is the characteristic feature of the discoveries by Kepler, and was the characteristic feature of the use of the notion of powers by pre-Aristotle Classical forms of Greek science.

Thus, as Riemann did, we are able to adduce the notion of a universal physical principle as a thought-object. Thus, it is no stretch of imagination, but simply competent science, to know that the orbit preceded the motion of the planet within it. This concept is essential to a clear idea of the actual way in which an economy works.

Every competent willful action in an economy, depends upon a forecast of its result. All that investment upon which an economy depends for not only its progress, but its survival, involves a decision based upon a forecast of the consequences of that investment over years to come. We are, by design, a *Promethean* species. We can not predict what will happen (at least, not usually), but we can forecast the range of types of alternative future choices which our actions will tend to promote. We are not “programmed” to react, as a robot could be; we foresee a choice which every robot would have been unable not to overlook. Thus, the planetary orbits show us the intelligence of the Creator, and teach us to follow that example.

For example, the planet is predestined to follow its orbital pathway, with the constantly, infinitesimally changing direction and speed which Kepler’s principle of universal gravitation proposes. That orbit exists prior to the Earth’s movement in that direction, and in that way. Thus, the principle of universal gravitation is already operating upon the space through which the planet Earth is about to move. It is not the infinitesimal distance between the points along the way, which is determining that action; it is geometry of the Solar System as a whole, acting upon the action occurring at each local point in the system.

That is the conception, by Kepler, which underlies his proposal for the development of what became the infinitesimal calculus discovered and developed by Leibniz. This why the baldly lying denial of Leibniz’s discoveries, as by Leonhard Euler and the Voltaireans generally, permeated the concerns of the leading empiricists of all Europe during the Eighteenth Century, and far beyond.

On the point at hand. How shall we think about a physical universe which is composed of thought-objects? This is the core of all of the leading contributions of Riemann.

From what I have identified, bearing on that question, in this report thus far, man’s physical-economic existence depends upon the progressive practice based upon an accumulation of discoveries of universal physical principles. The discontinued use of one of those principles, sets society as a whole backwards; the addition of a use of principle, sends society forward. Therefore, we must keep the distinction between human actions expressing the discovery of a principle, from human actions based on previous custom. The starting-point for a future science of economy, must therefore be primarily a political-economy of Riemannian manifolds, for which the characteristic form of action, against which all other forms of action are measured, is an upshift in the manifold of

universal physical principles reflected in the general economic and related practice of the society as a whole.

That future is now.

That means that, given the hopeless situation for the world's present monetary-financial system, we must free the world's physical economy from the cancer of monetarism, from such expressions of that cancer as "independent central-banking systems," and the present mode of institutions such as the IMF and World Bank. To speak in practical language, we must exploit the occasion of a generalized, presently ongoing collapse of the present world monetary-financial system, to place such systems into receivership in bankruptcy, a receivership for reorganization undertaken by sovereign nation-states, such as the U.S. government itself.

The process of reorganization in state-conducted bankruptcy of existing monetary-financial institutions, must be the practical choice of bringing forth a "Hamiltonian" American System-modelled order from the hulk of the bankrupt system. The primary mission of and among sovereign nation-states participating in this undertaking, must be the rapid application and further development of technologies subsumed by universal physical principles.

In the case of the U.S.A. itself, the Franklin Roosevelt precedent provides a practical guide. We must aim at the rapid transformation of the entire territory of the U.S.A., into a semblance of what it had been, as an economy, prior to the 1964–1968 cultural-paradigm down-shift. The leading edge of this will be large-scale, long-term investment of national credit in basic economic infrastructure. The associated efforts shall be chiefly the stimulation of the creative powers in the private sector as a vendor to the large-scale programs of capital-intensive development of basic economic infrastructure.

The economic studies, pivotted on the pedagogical use of animations, now being launched by *EIR* as a method for analysis of the physical reality of our national, and other present crises, become the economic map of our national territory which should be used as a way of measuring the required performance toward recovery and progress for times to come. The principle is, that the good we do for a part of the nation, is in itself a benefit to the nation and its posterity as a whole.

Animation As Such

The priorities set for immediate studies, are intended to make clearer to policy-makers, and citizens generally, how our nation has been nearly destroyed over the recent four decades, especially the period of slightly more than three decades. In other words, to expose and to prompt us to despise our ruinous mistakes. To accomplish this, we must take into account

each county of the nation, knowing that the progress or retrogression of any part of the nation spills over into the nation as a whole.

We must, in that process, convey the notion of change as progress or retrogression. We must shift the emphasis in accounting practice, from acts as such, to actions which express principled improvements over existing practice. We must emphasize those changes in principles of applied economy which have a “non-linear” impact on localities and the totality of the economy. For these crucial cases, it is not appropriate to show an ordinary sort of statistical trend, but rather something like an image of the planet Earth moving in its characteristic Keplerian orbit.

To paint that needed pedagogical picture, we must accumulate a set of animations, which, subsequently juxtaposed, show the ordinary citizen how crucial changes, expressed by animations, especially implicitly non-linear animations, in his locality are correlated with other changes, expressed by animations, in the same area. We must also show, similarly, by aid of animations, how the nation as a whole functions as an interconnected process from the standpoint of physical economy, rather than monetary-financial systems. It is in the examination of those interconnections that the most significant surprises will catch the attention of the citizen.

Then, by aid of this, we can demonstrate the way in which overriding influence of monetary-financial power has induced the wrecking of our physical economy.

Within this significantly animated portrait of the physical reality of the economy over recent history, we must situate the role of the introduction and use of key new technologies. This aspect of the study must focus upon the individual discoverer and his or her associates in that effort, and upon the exemplary role of the closely-held private enterprise in furthering the introduction, use, and continued development of the new technologies which supply a great and essential part of the technological upshift upon which a successful longer-term economic recovery will depend.

Out of such a process, an important revolutionary improvement in thinking about mankind must tend to emerge. Our culture must learn to think of discoveries of universal physical principle (and of comparable principles of Classical artistic composition), and to learn to despise empiricist mediocrity, as I do.